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<input checked="" type="checkbox"/> Reduce Costs	<input type="checkbox"/>
<input checked="" type="checkbox"/> Focus on Your Core Business	<input type="checkbox"/>
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IFCO's **InXchange™** program allows national companies to purchase pallets virtually anywhere in the U.S. and receive credit for pallets after use. The **InXchange™** program is centrally monitored and information is readily available online, any time via our exclusive PalTrax™ system.

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- ☐ Large companies with multiple sites.
- ☐ Consolidated invoicing and reporting for all pallet activity.

**InXchange™** couldn't be easier. You don't have to sign up all of you suppliers or destination points. There are no Non-Participating Distributors or lost pallet fees. Just let IFCO handle all your GMA pallet activity with **InXchange™**. IFCO handles all the paperwork and reporting. All your pallet related information is also available anytime on-line.

IFCO Systems' **InXchange™** Program was designed to meet the needs of our customers' ever-changing pallet and supply-chain needs. This program allows large, national companies to utilize our unequaled network of facilities to purchase pallets virtually anywhere in the US and receive credit for pallets after use.

Now, you can eliminate the high-costs and hassles of conventional pallet exchange and pallet tracking. Operating much like a bank, **InXchange™** allows companies to purchase pallets anywhere in our large, national network and receive credit for them. Consider it a virtual account that allows you to deposit and withdraw, receiving debits and credits with each pallet transaction.

Another exclusive benefit of **InXchange™** is PalTrax™ – our exclusive pallet tracking software. With PalTrax™, all **InXchange™** activity is centrally monitored and available online 24 hours a day, 7 days a week. With around-the-clock access you can check the status of your pallet activity, giving you the information you need to better manage your costs.

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- ☐ A single-source provider
- ☐ Consistent quality and service nationwide
- ☐ No hidden fees
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- ☐ Reduces pallet management time
- ☐ Reduced transaction costs

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- ☐ Efficiency of single-source for the purchase and sale of pallets nationwide
- ☐ Consolidate all pallet activity in one area, eliminating need for physical exchange, handling and administration
- ☐ Standard regional pricing for buying and selling
- ☐ Complete data reporting
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2

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**Modes**

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**Affiliates**☒ FREE Print Subscriptions☒ Printer friendly☒ Email a Colleague**Warehouse and DC****Are your pallet partners cheating on you?****Follow these guidelines to make sure you get back the pallets you gave.****By Susan Lacefield, Associate Editor****Logistics Management February 1, 2005**

Do you sometimes get the uneasy feeling that something about your pallets doesn't quite add up? You could be right. Maybe your customer isn't sending back the same number and quality of pallets that you left on its dock. Or instead of returning your pallets, your carrier's driver is selling them at a truck stop. Or perhaps your suppliers are overcharging you for the poor-quality pallets they use to deliver your product.

In short, your pallet "partner" may be cheating on you. It might be intentional (like the examples above) or it might be that your pallet tallies and your partner's don't match because of poor record keeping or simple lack of attention.

Whatever the reason, a cheating pallet partner can break not only your heart but also the bank. Pallets have a price, after all, and failing to control them can mean dollars are leaking out your dock door.

**Pallets = dollars**

The tricky thing about pallet control is that it's not just a warehousing or logistics issue, says Stewart Richardson, pallet guru and co-author of *Pallets: A North American Perspective*. When customers don't return your pallets, it also becomes a customer service and sales issue, he believes.

"Often you get the distribution group all agreeing that pallets need to be controlled," Richardson says. "But then the VP of marketing comes in and says, 'There's no way you're going to argue with my customer.' Then everyone else says, 'Ah, to hell with it,' and the program ends up having no teeth."

In other words, without the backing of a senior sponsor, it's hard to get sales and marketing departments to let you manage your pallet problem—or get your customers and suppliers to pay attention to it. But how do you get high-powered executives to care about pallets? Remember that the way to an executive's heart is through his or her wallet; you need to equate pallets with dollars. One way to do this is to multiply the cost per pallet by the number of pallets per trailer by the number of trailers that leave your facility each day. You could potentially be looking at a million pallets per year, which translates into many millions of dollars—and that's likely to make your CFO very interested. "Once you put it into dollars, you're no longer just talking about pallets, you're talking about asset management," says Belinda Junkin, CEO of the Canadian Pallet Council, which provides a pallet interchange system for consumer product companies in Canada.

Recent market conditions have strengthened the case for better pallet control. In the past 18 months, the costs of raw materials in general—and lumber in particular—have risen, and so has the price of pallets, says Randy Brown, vice president of business development for Ongweoweh, a pallet management company. Couple that with an increase in transportation costs, and it's clear why warehouse managers should be eager to gain greater control of their pallets these days.

**It takes two to pallet pool**

But internal commitment is not enough; you also need buy-in from external partners. Richardson suggests starting with your suppliers. "I always say, start with looking at what you are bringing in the rear door, because that's often where you get really

ripped off."

A supplier might, for example, send you a \$10 pallet but charge you \$20. To prevent this from happening, Richardson recommends establishing required standards and specifications for pallets so you can either exchange them with your suppliers or reuse them for your own outbound shipments. If that doesn't work, then ask your suppliers to take the pallet cost out of each unit-load price and show it as a separate line item on their invoices.

To encourage your customers to get on board with the program, focus on mutual benefits. If you're introducing the policy along with a new pallet, emphasize the new pallet's benefits—perhaps it's cleaner, stronger, or larger. Point out that returnable programs are better for the environment and can reduce your customers' waste and disposal costs. And, of course, you can pitch the program as a way to reduce costs, both for you and for your customers. "Explain to them that your cost of shipping product to them has increased by 30 percent over the last 18 to 24 months, and one of the ways that you can control cost is by using returnable packaging," Brown says.

Customers still might balk, for two main reasons. They might be selling the pallets that they receive from you, or they might not want to invest in the administrative costs of managing and monitoring pallets. In such cases, Richardson says, you might have to offer them some kind of incentive for participating in your program.

Once you're ready to launch a pallet control program, you'll need to make clear to every party that touches your pallets—including your carrier, public warehouse partner, and third-party logistics provider—what they are accountable for, says Junkin. A written pallet policy or letter of agreement is a good way to clearly spell out who is accountable and what triggers that accountability. For example, it might state that once the pallet moves off your dock and onto your carrier's trailer, the carrier is now accountable for the pallets. Such agreements also typically cover pallet specifications and quality; how pallets are returned, tracked, and accounted for; and how to handle rejected pallets.

Pallet control agreements needn't be overly complex. In fact, Junkin says she's seen some successful policies that are only a few paragraphs long. They should, however, be consistent with your other business practices, such as how you deal with shortages, damages, unpaid product, or customer deductions, she suggests. (See "Pallet Policy Pitfalls," at left.) Finally, because a pallet partnership (like any relationship) can change over time, Junkin recommends conducting an annual review of your policy.

#### **Electronic enforcement**

Enforcing a pallet policy requires both internal and external pallet monitoring and tracking. To make that work, you'll need to establish a disciplined set of procedures centered on either an electronic or a paper-based ledger system.

Electronic (typically Internet-based) ledger systems provide a common database where all parties—suppliers, distributors, customers, and carriers—can enter information about how many pallets were delivered, received, and sent back. These systems notify participants if there are any exceptions, and they provide visibility into that information.

Online ledgers, moreover, can cut down on administrative cost and time. "No human should do this job," says Victor Cheng, president of technology provider iLogic. "It would involve looking through 10,000 to 20,000 shipments and figuring out what the exceptions were, and then calling up your partner and yelling at each other. This is not a good way to use your employees' time."

With today's technology, Cheng explains, instead of taking a day-and-a-half to identify exceptions, it can take just 30 seconds. And instead of sending out paper ledgers by mail to pallet partners, exceptions can be resolved through e-mail.

There are many ways to acquire pallet tracking technology. Several pallet management companies, such as Ongweoweh and First Alliance, provide a pallet tracking system to their customers, and iLogic can design a system for single-company pools. Some pallet manufacturers, such as ORBIS, are starting to offer pallet management and tracking services to some of their customers. In Canada, the CPC provides a pallet tracking system to its members. Many shippers, moreover, choose to work with a pallet rental company such as CHEP because the rental company will track and administer pallets for them.

While the new Web-based tools certainly reduce the administrative burden associated with pallet tracking, old-fashioned paper-based methods can still be effective, Richardson says. Paper-based systems should include a ledger for each customer that clearly shows how many pallets went out to them and how many came in. Richardson also strongly recommends including a separate area for verifying pallet receipts with its own signature line on shipping documents. "Otherwise the customer can say, 'I signed for the [product], not the pallet,'" he warns.

The problem with a paper-based system, though, is that regardless of how good your own records are, you have to depend on your partner's records. "Even if you have an excellent pallet control system, your partner might not," says Cheng. "Your ledger might say that they owe you 1,000 pallets, but if your partner has a poor pallet control system, they might not necessarily give them to you. It can be very confrontational."

#### **Value the people**

No matter what kind of tools or policies you put into place, the success of your pallet control initiative depends on how well it's administered by your front line employees—the men and women on your dock, in your distribution center, and driving your trucks.

Getting their support involves getting employees to value the pallet itself as much as they value what's *on* the pallet, says Cheng. His suggestion: "Go into a presentation with forty \$20 bills, throw them down on the table, and ask, 'Would you leave that in the back of a truck overnight and expect it to be there the next day?'"

By the same token, your pallet control program will be more successful if you value the people who administer it. Too many companies see the pallet administrator position as a dead-end or entry-level job, even though it can be a first step toward a customer service or sales position—or beyond. Junkin, for example, says pallet administrators she hired when she worked for a

major food manufacturer went on to manage warehouses. Richardson knows former pallet clerks who have risen to become directors of inventory management.

Finally, recognize that managing pallets isn't easy. A pallet administrator who must call delinquent pallet partners (often your valued customers) needs to be as much a diplomat as an accountant. "I firmly believe that this is the most underrated position," Junkin says. "It often gets delegated down to the lowest of the low, and then we wonder why we're not successful."

Successful pallet management ultimately hinges on the issue of respect. By respecting and valuing not only the pallets but also the employees who handle and manage them, it's much less likely that your pallet situation will leave you brokenhearted.

## Pallet Policy Pitfalls

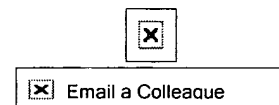
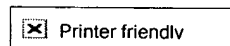
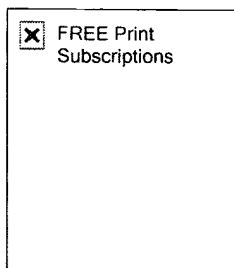
An effective pallet management program requires issuing a formal, written policy that governs how pallets are used, returned, tracked, and accounted for. But that doesn't mean your policy has to be long and complicated, says Belinda Junkin, CEO of the Canadian Pallet Council, which provides a pallet interchange system for consumer product companies in Canada. Even a policy that's only a few paragraphs long can work well—provided the right information is included, she says.

Just as important as knowing what to include in such a policy is knowing what *not* to do. Here are some examples of pallet policy mistakes that can end up costing your company:

- Ambiguous pallet specification criteria
- Overly technical pallet specifications—technical requirements should be kept to one page
- Unrealistic pallet specification standards that make pallets difficult to source or expensive to buy
- Inadequate time allowed for trading partners to return pallets
- Pallet policy letter inadequately distributed to key people in program, such as carriers, buyers, sales staff, and warehouse employees
- Adding extra pallet expense to a trading partner's bill after product and service prices have already been agreed upon
- Implementing a pallet deposit system that your sales department will resist.
- Pallet policy letter hasn't been signed by someone who has adequate influence

Source: Rick Le Blanc and Stewart Richardson, *Pallets: A North American Perspective*

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3



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### PalletBoard Online Discussion Explores the Grocery Industry and Its Pallet Usage

For years, the 48x40 stringer pallet, commonly known as the GMA, has been the defacto standard for the U.S. grocery industry. But that has all started to change as some retailers have gotten a taste of block pallets thanks to pallet rental companies. This has led to widespread speculation that the block pallet may become the pallet of choice in the future.

The block pallets have become popular with retailers, especially at the store level. But it still has a long way to go to unseat the stringer design, which has been commonly used for years.

Jeff McBee, the market analyst for the *Pallet Profile Weekly*, started a discussion on the PalletBoard, the online forum for the *Pallet Enterprise*, on the topic of the GMA design. It mushroomed into an expansive review of issues facing the pallet industry as it seeks to find a way to meet changing demands from the grocery industry. The discussion included a grocery user, pallet companies and other logistics specialists.

This is the first time that a discussion from the PalletBoard has been transcribed, edited and published in the print magazine. Please be aware that names may not reflect the true identity of the poster. While we would normally not publish an online discussion in the print magazine, this one was just too good to pass up.

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#### The 5/8 GMA - a Heavyweight? by Jeff McBee of the *Pallet Profile Weekly*

When I began working with the pallet industry back in 92, the 5/8 GMA was frowned upon as dubiously lightweight. Now it seems as if the 5/8 GMA is quickly becoming a dinosaur.

I know that customers often look to reduce the amount of wood in a pallet in order to reduce the initial cost of the pallet. This is sometimes at the urging of the pallet salesman, but more often the result of the customer insisting on a lower price with whatever means necessary.

I have several questions for the Pallet Board brain trust:

1. Is the 5/8 GMA truly a dinosaur?
2. If so, what is the most common GMA "style" pallet?
3. What is the most common stringer for today's GMA "style" pallet?
4. Are customers no longer interested in anything other than the initial cost?
5. Do customers no longer consider potential pallet failure in the purchasing of pallets?

Cheers,  
Jeff McBee

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#### Re: The 5/8 GMA - a Heavyweight? by Grocery User

As a person in the grocery business, I will answer the questions.

1. Dead and gone. In fact, they have turned to coal.
2. Junk. The vast majority are junk and are not holding the weight that is being placed on them.
3. Broken and substandard. See #2.
4. Cost is still a major consideration. What works for the manufacturer of product may not work for the distribution center and the variety of racking configurations. High failure rate.
5. What works for both? (A question you should have asked) Answer - CHEP Pallets, PECO pallets. Even with the issues. You know what you are getting, you get a true 4-way in the block pallet, strong enough to hold in the variety of rack configurations, they are still repaired to a higher standard than most GMA clones, and they are

more cost effective at face value. Works for manufacturing and distribution.

Sorry white wooders, you need to get a product to compete with these platforms. The GMA was king, the king is dead, long live the king - now get in step with what the grocery industry wants and not back to the failed pallets and programs of the past.

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**Re: The 5/8 GMA... a Heavyweight? by CHEP SUCKS**

If you are in the grocery business then you must have some concept of how CHEP depots work....have you visited one and looked at the so called spec they have or are you a simple forklift driver who doesn't have a clue.....

1. CHEP pallets are old they aren't putting as much money in to them as they did before.....
2. CHEP pallets are being refused at Coke on a daily basis because they don't meet their own spec
3. CHEP will change their spec in house when pallets are short in their area.....
4. CHEP only cares about dwell time and nothing else.....
5. I don't care for CHEP .....

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**Grocery User is Right by Shapiro**

Grocery User, you are right. Even a CHEP or PECO pallet in a poor state of repair is much better than the average repaired GMA. Recyclers, don't fool yourselves into thinking that your quality is better than pooled pallets. On average, it simply can't compete. You're best chance is to compete on price and service.

Question: If CHEP is being rejected at Coke daily, why haven't they lost the business?

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**Re: Grocery User is Right by The Heavy Hitter**

Yeah, I feel real good about choosing a pallet from a company called CHEP that now doesn't paint repair boards or blocks, paints over repairs that should have been made, and sometimes does not paint the "owned by CHEP" on some repaired pallets. Their current pool is equivalent to or is less quality than a new or recycled white pallet. It didn't use to be that way but that's the fact now.

I can't speak about PECO, the current influx of new PECO pallets are good quality, but are they a viable alternative based on volume?

Last, Coke is rejecting CHEP pallets. Whether they stick with CHEP or not, time will tell. But it is guaranteed that CHEP is incurring a lot of costs to keep shipping the same pallets to them.

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**Re: The 5/8 GMA... a Heavyweight? by Worked in Grocer biz.**

I respectfully disagree with Grocery User. If you were purchasing new (sorry recyclers) white wood true GMA pallets with 5/8 decking you would not be having the problems you mentioned. As for using a CHEP style pallet, we experienced way too many employee injuries with that pallet and too much product damage when double stacked (too heavy in both cases). Also, I didn't like being responsible for someone else's property. If our pallet count came up short, that bill was ridiculous. I'll take the new white wood over a CHEP pallet any day. It may be a dinosaur in other industries, but it works well for the grocery industry.

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**Re: The 5/8 GMA... a Heavyweight? by NPC**

We build a pallet using pine that I'd put up against a true GMA pallet. A few more boards, but it out performs the hard wood pallet, and my customer appreciates the lower cost.

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**5/8 GMA by Grocery User**



Twenty years ago the 5/8 GMA pallet was very hard to find, and now, regardless of the rhetoric they do not exist. The pooled pallets are by far the vast majority of the pallets in the industry, like it or not white wooders!! With their quality standards deteriorating you think that white wood would be making inroads. However, other than some small victories, this is not the reality of the situation.

Let's not forget one thing; pooled pallets are a consistent pallet size and specification. CHEP, PECO, you know what you are getting. The purchasing agent is now out of the process of setting specifications that do not necessarily work throughout the industry.

Another equally important factor is that this industry did not and does not want to mess with pallets. They want someone else, a third party, to deal with. If a CHEP breaks and \$2,000 worth of merchandise is damaged, guess who gets billed? It is guaranteed money to cover the loss. Is CHEP going to say to a P&G, Campbells, etc. "We ain't gonna pay?" Not hardly.

White wooders, you can have a good product and all of you are right, you just built what the customer wanted. But the customer now wants something different than the same old program that they got rid of in the first place. The time is now to look at changing the model of the white wood industry to take care of the major grocery chains and manufacturers on a national scale. You need to be able to go into the board rooms of these corporations, speak their language, sell your superior product and service, at a reasonable price. Gone are the old days of white wood pallets in the grocery industry.

However, we all may hate CHEP, its model has been accepted and embraced by this industry. Are there problems? Yes. From these problems are there opportunities? Yes!! But you must be prepared to change the old model of selling pallets as a liability to the customer to managing this pallet as an asset for the customer.

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**Re: 5/8 GMA by Quality Control**

Most users would rather not have someone manage an asset rather than have someone manage a poor asset. You underestimate the white pallet.

What kind of revenue is generated from white pallet sales every year from DCs? You can ask CHEP that question since they are in the business. You think these generators want that revenue to go away. NOT!

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**Re: 5/8 GMA by Sincerely Interested**

Grocery User: You make some very good points, but you also make some assumptions that are too harsh. You say that the industry doesn't want to mess with pallets, that they want someone else to deal with it. This may be true of some companies, but not all. What companies want is a cost effective, low-hassle process and if a 3rd party can provide it, great. If not, internal processes are viable options.

You refer to the old model of selling pallets, and the problem of purchasing agents setting specs. The "old model" for GMAs was exchange, which is still the predominant process employed by many companies. Most companies involved are frustrated by this process, and poor quality is the major issue. However, it isn't the shipper's purchasing agent that is "guilty" of causing the quality problem. Most inbound pallets in an exchange environment come from truckers as they pickup their next load. Typically, only about 20% of pallet volume is "purchased" to supplement the exchange program. It's the other 80% that is the problem area where substandard pallets creep into the process and create the quality problems. Don't get me wrong, I am not endorsing the exchange process. It clearly has lost its favor in the industry, and new solutions are needed.

This is what gave rise to the rental program in the US 10+ years ago. I agree with you that the model has been successful in capturing a significant share of the market, but I think "accepted and embraced" are words that are too strong. While this may be true for a select few major players, the majority of companies in the industry are not happy. Because there is so much unhappiness, I agree there is tremendous opportunity. But the opportunity is not limited to fixing the problems of the rental model, or devising some other 3rd party solution.

I invite you to visit my Web site, [www.bussystemsinc.com](http://www.bussystemsinc.com) to get some additional perspective on what I call the "pallet dilemma" or send me an e-mail with your contact information.

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**Re: 5/8 GMA by in since 72**

Let's take a closer look at the cycle. Food manufacturers get pallets under 5/8 from their raw material shipments and reuse those when empty to supplement purchases of same type new pallets from their product shipments. Next it goes to the DC or mixing center, then off to a grocery DC. All thru the cycle no one has a problem with pallet breakage.

The reason it works is they automated and change their pallet handling method to accommodate their pallet budget because pallet cost is ongoing and investing in automation is one time.

Now the grocery dc supposedly has a problem. It is because you're doing things the same way with same methods for the past 30 years. The only change is to increase the inventory turn over without investing in the operation.

Let's look at palletized product coming from abroad. The pallets are very thin and are handled many times. They travel thousands of miles and are in great condition when empty. How can that be?? Could it be that management has invested in methods to protect the product rather than simply blame the pallet for all damage?

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**Reply to Sincerely Interested by Grocery User**

SI - I am familiar with your B.U.S. plan. While I agree with many of your points in the plan, I do believe there are some "opportunities" here.

First, there is the assumption that a GMA pallet spec actually exists in reality. I will agree that there is a stringer pallet that follows the design model of the GMA, but not the specifications of the GMA pallet. The GMA hardwood pallet spec is a good and sturdy platform and properly managed and repaired would be as good as any leased or pooled pallet in existence today. One major problem with the design of the pallet is the bottom deck board configuration. The problem lies at the case pick DC level where a powered pallet jack with forks of 96 inches or 144 inches are in use. The front wheels of the jack are the scourge of this pallet, probably causing 90% of the damage to this pallet.

There is very little tolerance between the opening provided by this pallet and these wheels. If all palletized loads are within the parameters of the pallet, then there is not as much problem with breakage and getting the jack hung up when backing in or out of the pallet. If the product has overhang, the chance of damaging the pallet or product significantly increases.

Another problem is that a pallet jack can only enter from the ends and not the sides. Due to multi-store picking, many DC models require the pallet to be loaded on the 48-inch side which is not possible with a stringer pallet design.

The true 4-way pallet or block pallet does not present these challenges and is much easier to load with a jack and a lift truck. It is also easier to access at a higher rack configuration.

I am a proponent of pallet standardization for the grocery industry. It would solve many, many problems and allow all types of pallet management programs to flourish. Like them or hate them, the pallets in use by CHEP are good, sound pallets that work well in the industry. CHEP has chosen not to manage the repair end of the business very well which is degrading their pool. Their choice of wood species and nails is also a contributing factor.

Pallet management and standardization whether a white pallet or blue pallet is the key to success for this industry. You and others have gone into the executive offices and have identified many of these problems. They need to be fixed jointly by both. But who has the means to do this in this industry?

Big blue, though hated by many, is still viable. They have recently made a personnel change to address their quality problems. What if CHEP whose affiliates control a very high percentage of the cores from the grocery industry finally figure out that CHEP can now manage these cores??? Just think of that scenario!!!

Just some food for thought.

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**Re: Reply to Sincerely Interested by Gambler**

Dear Sir,

Yes, the modified GMA that you see today is alive only because purchasing people always want cheaper pallets. After some time in this business our favorite joke is, "In time we will be shipping sawdust and nails." You get what you pay for....if you want a real GMA I would love to build some for you. But the price will stagger you.

RE: First, there is the assumption that a GMA pallet speculation actually exists in the real world. I agree that there is a stringer pallet that follows the design model of the GMA, but not the specifications of the GMA pallet. The GMA hardwood pallet spec is a good and sturdy platform and properly managed and repaired would be as good as any leased or pooled pallet in existence today

Re: Reply to Sincerely Interested by Sincerely Interested

Grocery User: I agree with you 100% on the handling, design and quality issues that you raise. These are definitely value attributes that the rental model has provided to the supply chain. I contend that these same attributes can be addressed via the B.U.S. Process, utilizing the open market that currently exists (the pallet manufacturer and recycler community) to "manage" the multiple use of the pallet. Why not a used market for block pallets? The B.U.S. Process is not limited to GMA "type" stringer pallets; it's just the closest thing to a "standard" right now. I'm no historian, but I assume that back in the day when the GMA was first conceived, it was determined to be the best common denominator design for the handling practices up and down the supply chain, and the exchange program was adopted as the standard management process. In today's world, maybe both are outdated, and the industry needs not only a new management process but also a new design standard for the pallet. The rental model has opened the door for the block design, and obviously it has improved handling performance in your neck of the woods. But does the need/desire for a new design necessitate a 3rd party monopoly? I hope not. The B.U.S. Process can help "clean up" the GMA stringer pool, and like the rental model, create a management process to support a transition to the block design in an open market environment. Let's do it! - SI

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Re: Reply to Sincerely Interested by Grocery User

You are right. There is no need for a third party monopoly in this country. But there is plenty of room for third party pallet management with standardization. Computers talk to each other because of standardization. Bar coding and a variety of other technologies have certain standards that make an international system work. There are ISO standards, ANSI standards, engineering standards, etc. There is a need to look at some common ground in the pallet industry. There needs to be strong leadership from the pallet industry to make this happen.

There is a place for all pallet management systems. It is what works best for the customer that counts. Trust me, if CHEP fell off the face of the earth, I would be one of the first to give them a shove in the butt. However, I have learned a lot from them, good and bad, as I have learned from white wooders, good and bad.

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Re: Reply to Sincerely Interested by Sincerely Interested

I would suggest that the better way to get some leadership going on the subject of standards and quality and management processes is through the major industry associations that have addressed these issues in the past...GMA and FMI specifically. GMA seriously considered convening a pallet subcommittee last summer; however, the recommendation did not survive the priority planning process for this year. FMI is willing, but only if the issue (pallets) is a priority for its members. VICS is also evaluating a pallet initiative via the transportation committee.

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Re: Reply to Sincerely Interested by CHEP SUCKS

CHEP works well in the upper management level (Look they convinced you of management change) the pallet you are receiving is going to be just as bad even with a new person. I recently visited Coke in California. And just Friday, Coke refused another four loads...as CHEP continues to wine and dine the upper management. The blue pallet will stay but ask the forklift driver if he likes the pallet. He'll probably say no because it is too heavy or bad quality.

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Re: Reply to Sincerely Interested by Gambler

I'm with your drift pallet maker. After all the recent input, I would appreciate knowing approximately how much? I'm ready to be staggered.

Secondly, do you see any possible change to this issue on the horizon?

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**Questions for Grocery User by Rick LeBlanc**

Grocery User, I am curious as to what your annual DC pallet expense is, (net purchases/sales, pallet repair etc.) and what kind of hours your DC allocates weekly to pallet management. I've talked to several DCs across the country, and it seems like DC pallet management is often a 1 to 4 hour a week job at best. What kind of commitment do you feel it takes to run a good program?

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**Re: Questions for Grocery User by GU**

I will not share proprietary numbers. I will say that the expense as a percent to sales is 0.00006, and as a percent to DC cost 0.006 for the year.

The time it takes will vary depending upon the phase you are in with the management program. Startup will take more dedicated time than when the program has been running for some time. It is very important that the coordinator have his finger on the pulse on a daily basis and that all phases of the program are being monitored.. Some time for reconciliation is required for monthly accounting periods. I probably spend no more than 5 to 10 hours/week staying on top of the program. Mind you, this is just one of the hats I wear and is definitely not my primary job.

As far as commitment, whoever is in charge, their performance evaluation and salary structure should be tied to the performance of the program. They need to get a general understanding of the logistic flow of pallets in their company, some traffic and transportation knowledge, review journals and information about pallets in general, including pallet and core pricing, rental/lease programs, and how to structure deals that are good for everyone, not just them. A good, trusting relationship with their white wood pallet recycler can be critical. They are a great source of information and resources.

I would never recommend conducting any type of pallet basis strictly on a low cost basis. You will loose in the long run and will not save money or time. A true pallet professional can offer value added services above and beyond pallets only, or they may be able to partner with someone that can. Trust is a must. You will get more value from a reputable pallet professional versus Bubba the Pallet Guy just cutting prices.

The pallet manager must be able to understand pallet pricing structures. This understanding of cost of the recycler doing business will help him determine if the recycler can make money on the deal. A business relationship will not last the test of time if one wins and one loses.

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**Questions for Grocery User r.e. Facts by Sincerely Interested**

Thanks for the data, Grocery User. This type of information is very helpful for people to understand the performance issues and results that you are experiencing. A few questions for clarity if I may:

1. Do you do pallet exchange?
2. What does "5 to 1 ratio" on returns mean? Returns from stores to DC?
3. "Per pallet cost cheaper than white." do you mean DC operating cost?

- SI

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**Re: Questions for Grocery User r.e. Facts by GU**

1. Yes. Full loads 97%. Dock exchange 3%. Some things never die.
2. For every five loads of CHEP to depot, one load white to recycler.
3. Distribution pricing models are different depending on what side of the fence you are on. In our case, there is no charge for CHEP pallets from any source. Our only expense is the cost for the return to the depot. Therefore, our per pallet cost is well less than \$.50/pallet. We can use and abuse them, download them, transfer them, etc. as much as we like (more than what CHEP likes).

So we have eliminated pallet purchase, minimized dock exchange, deal in full loads of white and CHEP pallets alike for banks, get better trailer utilization out of the block pallet, less damage, less people to handle the pallets, no repair expense, revenue from sale of white pallets, use for palletization of floor load freight, no workers compensation cost with these pallets, etc. I could go on and on about the creative ways we are utilizing them and reducing our overall pallet expense.

So with a bottom line cost gross cost of less than \$.50/pallet, much less when you figure net cost, I would challenge anyone to prove in writing how a white pallet program is cheaper.

I do recognize that depending on the type of DC operation, and I would venture a guess that by SI being employed by Kraft, the manufacturing side of the business, this luxury may not hold true. Wholesalers may not have such a clear advantage either.

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**Re: Questions for Grocery User r.e. Facts by Fast Freddie**

You may not be footing the bill, but for every day that the CHEP pallets are in circulation, they are accounted for and someone is paying for them.  
-FF

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**Re: Questions for Grocery User r.e. Facts by GU**

Sorry Freddie, that is not necessarily true. Once relieved from the supplier inventory, they are off the clock. We are not paying, the supplier is not paying, the trucker is not paying. Guess I am wrong, CHEP is paying at this point. This is the point of dwell time where they do not make money and that is why they want to control dwell time.

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**Re: Questions for Grocery User r.e. Facts by the original pallet guy**

If you do not pay for dwell time, is that typical of all Chep downstream users?

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**Re: Questions for Grocery User r.e. Facts by More answers**

Also, how many people or hours does it take to keep up with the CHEP paperwork? Are the depots cooperative? Do the counts match up? How much time is spent dealing with the depot? How much equipment do you have tied up with transport of CHEP pallets? Do you account for any of this when you figure your pallet cost?

Would you gain more revenue if they were all white pallets, except for exchange?

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**Re: Questions for Grocery User r.e. Facts by CHEP Lover**

The clerical time is insignificant. They are on the payroll anyway, and at one time, processing white wood was their job.

Depots run in spurts. When busy, real pain. When not, run smooth. CHEP and its restrictions it places on the depot to react to customer needs is more of a problem. CHEP often has the screws too tight on the depot, and CHEP does not want to pay a premium to the depot.

The depot is CHEP's responsibility, not mine. I would request to be a depot if certain things would fall into place.

As far as the counts, we hold them to the fire and make them account for all discrepancies and loads. Inventory never has been a problem. There is a penalty clause, but the company has never paid (and probably will not). You just need to manage them. Treat pallets as if they were product being sold.

Transportation is contracted, and no company assets are tied up.

All of this is factored into total pallet cost. Volume is a wonderful thing and helps lower per pallet cost.

As far as white pallet revenue, based on the old model - no. Must purchase from vendor at market price, sell to pallet company below market or pay for repair. A white pallet in a rental model such as CHEP, who can tell. It would depend on the terms of an agreement.

Look, many of the issue are just this, a pallet is a pallet is a pallet, and there are many fixed cost other than the color of the pallet or the program you are on. It all comes down to managing the pallet as an asset. Not all DC models are the

same. What works for us may not for a warehouse that Kraft is using. It all boils down to the negotiated agreement with CHEP, PECO, or a white wooder. It is how smart you manage these programs to reap the greatest value.

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**Re: Questions for Grocery User r.e. Facts by Woody Bond**

However, the "user" perspective is strictly DC oriented. The blue pallet gained its position from what the shipper wanted. When white wood offers a program (and we will) that saves money, the DCs will not have a choice in the matter. Unfortunately, for the DCs, the least expensive models (when considering the entire cycle) save some money at every point in the chain. DCs have harvested more savings than the rest of the supply chain and that will be the next place where the Jack Welch types in the grocery industry will look to save money. Then, it will be your turn to wish you had never seen a blue pallet.

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**Re: Questions for Grocery User r.e. Facts by GU**

I wish I had never seen a blue pallet in the first place.

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**Re: Questions for Grocery User r.e. Facts by Sincerely Interested**

Grocery User, I accept your challenge...please contact me directly. And to clarify my role, I do not work for Kraft; I used to, but that was in the late 70s!

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**Grocery User by Grocery Eater**

First, finally a good topic and insight that most everyone in the industry should find interesting.

However, you seem to oversimplify the CHEP model, and the costs associated with it.

With white wood you should have only had two transactions. Wood coming in and wood going out. Hopefully, with one supplier for both transactions.

Now, with CHEP you have added transactions and paperwork. You get CHEP pallets in, you send them out with paperwork, and then you have deal with the depot paperwork. I am not that naive to believe that all of that paperwork matches up on a consistent basis and that it is not a big pain in the rear to straighten it all out. I have heard too many horror stories. I have also heard that DCs have hired one person just to keep up with this, probably high volume CHEP DCs. You would never need one person that could cost you \$30K-40K a year just to take care of CHEP with white wood.

Now not only have you added transactions, you have added other parties as well. Besides yourself, you now have CHEP, the depot, and the carrier who is hauling the pallets.

Lastly, you don't speak of the time spent to separate these pallets out at the DC. Surely, you must keep the blue separate from the white? How many people are associated with this function? What is the yearly cost? Salary, benefits, forklift expense, etc.?

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**Re: Grocery User by GU**

Just remember that a pallet is a pallet is a pallet. A DC performs many of the same motions regardless of the type or color of pallet. In the beginning, sortation was no big deal because there were so few CHEP pallets. There was a time where it was a pain and somewhat time consuming as the number of CHEP pallets steadily increased. Now since they have the majority, it's not a big issue. Does it take time, people and equipment? It sure does. However, you still have to deal with pallets and that is mostly considered a fixed cost of doing business. It just depends on how that piece is managed and contractual obligations that you may have to work under. In other words, the total third party of pallets may not be possible due to collective bargaining agreements.

When 100% were white, we sorted good from bad for reuse, so that never went away. In addition, we had to track and

handle the white pallets to the recycler, dock exchanges, pallet banks, paying vendors, etc. From an inventory standpoint, pallet accountability with white pallets was more of a problem and more time and people consuming. With the rental program we do not worry about vendor returns, counting the pallets on the dock, billings, exchanges, etc. The bill-of-ladings are the same as with white being returned to recycler, vendors, etc. The depot gets a BOL from us, and we get a weekly transaction report in the mail. As far as matching up, I am just dealing with one entity, CHEP, not the depot, about irregularities. In the pre-CHEP days, you had to manage each vendor individually requiring more time and effort for reconciliation. Much bigger pain the old way vs. the new.

We have had no horror stories. I have heard of them also but when you get down to the nitty gritty, it appears that the company in question did very little with the CHEP program and let it get out of hand. They placed no system of checks and balances throughout the process and when the marker was called in by CHEP, they could not argue the case. This would happen at any location if they had no system of checks and balances for their inventory. This is not a surprise and was just bad management on the part of the company in question. Again, they chose not to manage an asset - the pallet.

Therefore, the rental program is more along the lines of pallets coming in and pallets going out versus the old white wood model. Folks just remember, it is not about the pallet per se. It is about the management approach being utilized with the pallets. It does not matter whether white, blue, red, or pink, it is the proper management system determines the efficiency of pallet movement through ones logistic system.

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**Re: Grocery User by Fast Freddie**

Grocery User, I appreciate your openness in discussing the pros and cons of how the pallets are handled in you facility as your insight brings the pallets to us from a users perspective. Hopefully, some of us learn from this and do something for the betterment of our industry.  
-FF

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**To Grocery User r.e. Your Challenge by Dave Sandoval**

Grocery User: In your Jan 11 post, you issued a challenge to anyone who can show you, in writing, how a white wood program can be lower cost program for you than the rental program. I replied to that post, and accepted your challenge. I have not heard from you, and wonder if you may not have seen my reply. If so, I am reiterating my acceptance of your challenge, and ask that you contact me. Again I thank you for sharing your information on your pallet programs, your experiences and your perspectives. This is valuable information for this audience and will be helpful as we work towards meeting your needs.

Also, I will no longer use "Sincerely Interested" as my handle on this board, as someone has recently decided to use it as well (see post dated Jan 18 r.e. NWPCA).

Dave Sandoval (formerly SI)

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**Re: To Grocery User r.e. Your Challenge by GU**

If you are willing to have an open, professional discussion on this board, I am all for it. I have read and studied your B.U.S. and though I agree with many of your points, I respectfully think there are some major holes in the dike.

I believe you are in the process of copywriting this process, therefore profiting from anyone who uses this process formally. However, many in the industry follow many of the points outlined in the program. You have everything to gain by a public critique of the B.U.S. program, and I would have much to loose by going public to you or anyone on this board.

I am neither blue nor white. I view way too many posts that are ill informed and very closed minded. We had a very good dialogue going which several believe there was good info passed. I am neither 100% right in all instances and I know that, but I am not 100% wrong either. I was just sharing some of my experiences with pallets and various programs that I have observed and dealt with over many years working with members of this industry, blue, white, red, green, etc.

Therefore, if you want to have a public, professional discussion about the challenge I put forth, then lets have it. As Michael Buffer says, "Let's Get Ready to Ruuummmble!!!"

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### Grocery User Rumble by DS

OK, GU, let's rumble... Unless you and I have had some direct communications, you may not understand my business model. The status of the process is "patent pending", and the "scope" of the process covered by the patent application does not include the receiver (you) or the recycler.

Now on to the challenge...Let's look at a simple scenario, using actual regional price data from the Recycle Record (December '04 edition). #1 GMA's range in price from \$5.00 in Virginia to \$6.35 in Illinois, and cores range from \$1.20 in New England to \$2.25 in Illinois. The average "spread" between core price and #1's is \$3.71. #2's range from \$3.20 in North Florida to \$4.60 in Illinois, with an average spread of \$1.92 relative to core price. Keep these numbers in mind...

You indicated that you "have eliminated pallet purchase" and that you have "revenue from sale of white pallets". Further, you do pallet exchange (97% full loads, 3% dock), yet have only 37% of inbound white "good as is". I will assume from this data (correct me if I am wrong) that you are not exchanging with all shippers delivering on white, and that you are not satisfied with the overall quality of white wood coming in under load. You also said that you have told several vendors using white wood to improve the quality or go to CHEP. I assume that these "problem" vendors are not on exchange, and that these poor quality pallets are the pallets that you are selling, and that these poor quality pallets have a negative effect on your productivity.

What if...all inbound white pallets under load were GMA #1's in good condition, and you had no exchange programs to support? Your productivity would improve, and you would have large quantities of excess GMA #1 pallets in good condition to "sell". What could you get for them in the market place? What are you getting now? And what is the quality of what you are selling? Can you get a better price for a GMA #1 in "sellable" condition? Getting a handle on the revenue potential is the first step to understanding the value proposition. Could be, depending on your DC locations, that this scenario may look like a pretty good revenue opportunity. Today's reality however is that only 37% of your inbound white wood is "good", and you need these to support your exchange programs.

What if...you approached your vendors on white wood with a proposition to buy GMA #1's under load at a negotiated price that meets your net cost objectives. This will give you the leverage to address the quality issue, (vendors shipping on #2's will upgrade to #1's if you pay them the difference) while at the same time achieving a net lowest cost pallet program, even a negative cost (otherwise known as profit) program.

Now, tell me about those holes in the dyke??

-DS

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### Re: Grocery User Rumble by GU

First, I will not take unfair advantage of this discussion. I will be open and honest without violating any proprietary information or confidentiality. I have been dealing with pallets for many years and have a solid background to make this an interesting discussion.

Round 1 - What if... all inbound loads were GMA #1 in good condition with no exchange program. I would be a happy camper if this were the case. In fact, if I could dictate the pallet of choice would be a pallet meeting the 9-block specification similar to the CHEP block pallet. Hardwood is fine just as long as the specification is equal.

Now, back to the GMA #1, pallets are a commodity like anything else. I have seen a variety of pricing schemes where the full market price of the pallet was paid to the vendor as part of the invoice, the vendor cost of the pallet was buried in case cost, transportation, etc. In the pre-CHEP days, out of 100 vendors, there may have been 25 different pricing points, and with many vendors, multiple price points. It was quite frankly mind boggling to manage when dealing with 9500 vendors. Some vendors made money on pallets and others did not. Quality and spec was across the board. Pallet repair and sortation was once a union job costing a few thousand dollars/month in wages and benefits alone. It was close to a full time clerical job to manage with usually support from 2 to 5 management folks. Indirect cost of the receiver's time to inspect and log each pallet coming in and noting problems on the bills.

Now I have this pallet that is saleable. I have two choices. One, take on the in house cost of management and execution of the pallet purchase program and take on the challenge of selling these pallets back. The second option is to do away with this cost and sell them direct to a pallet company and get what the market will bear.



Let's use the Illinois example: I pay the vendor \$6.35 for his pallet. The pallet flows through the operation in the normal manner which I will not put a handling price to because as I have stated, a pallet is a pallet. There are certain fixed costs that will always be there.

Choice one, I take these pallets and sort good, repairable, non-repairable. There is a per pallet cost to do this. I can now turn and sell this pallet back to one of my vendors, or sell it back to the original vendor for what I paid for it. I can repair the pallets needing repair in house at a cost, or I can hire a pallet company to do that for me, at a cost. In addition, I could just have the pallet company purchase the repairable and non-repairable pallets. I am quite positive it will not be at the original price I paid for the pallet.

Choice two, eliminate all in house pallet handling, pallet repair, sortation, all but just the normal fixed cost of handling a pallet. Get the most money I can by selling to a pallet company, add the savings of labor, materials, and equipment, benefits, etc. and just try to reduce the overall cost of the program.

Now, let's say the vendor in Illinois does not want to buy this pallet back. Now, I may have to sell this pallet at a loss to a vendor in Virginia at \$5.00/pallet. Not only that, I may have to foot the freight bill to get the pallet to Virginia. Whoever the vendor is, I will probably have to pay or share the cost of freight in some manner.

The same program can work in reverse with the lowest cost pallet going to the highest cost vendor so you could make a case for more revenue or profit going that direction. However, you are probably going to look more at the average cost of the sum total of the pallets you purchased from all vendors and use that number as a baseline number for pallet cost. In the scenario just played out, it is virtually impossible to reap a profit on pallets in this manner. Pallet sales in this scenario will reduce only the total cost of your pallet program. The degree of that cost reduction is dependant upon many, many different factors and how the program is managed.

At no time will 100% of the pallets go through a distribution system and not be damaged, regardless of the quality of the pallet coming in. The GMA style is more likely to have a higher percent of damage due to its configuration in regards to some of the material handling equipment that is used in many DCs. The block style pallet generally has a lower degree of damage because by design it is more compatible with the equipment in use, and you never have to deal with stringer stress cracks which can significantly reduce the weight capacity of the pallet, especially when factoring racking that does not completely support the pallet.

As far as the quality issue, I have that leverage with white wood now as I did back then. I can charge back a significant per pallet fee for the cost of the bad pallet, plus labor and "punitive damages." But once again, this can be a real management nightmare and many will get through the system unless tight controls are in place.

I can also have the product shipped on the floor, making the vendor foot the bill for the break down and palletization on my dock, and just say to heck with the pallet. This may not be the most cost effective way to do business, but it can be an effective hammer.

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**Re: Grocery User Rumble by Fast Freddie**

GU, I agree that a nine block style pallet is an easier to use pallet, but a properly built stringer style GMA pallet can hold up as well or better, when you compare \$1 to \$1 spending on pallets, a new \$15.00 (cost to build) GMA will be comparable or better than a \$15.00 9 block style pallet.

I personally like the nine block style pallet and am presently trying to sell several of my Grade A GMA pallet users to a nine block style pallet as it will be more versatile for its application. I wish that as an industry we would embrace a certain specification of pallet design (similar to the policies and procedures of EUR or CP in Europe).

Also, if the people loading the pallets (our customers) would appreciate a well designed pallet, some of the ideas being boxed around would have a better opportunity of becoming a reality.  
-FF

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**Re: Grocery User Rumble by GU**

FF - it is not just about the platform. It is also about the versatility of that platform and the potential operational savings from the variety of powered industrial trucks that can easily be used with that platform. You cannot use a pallet jack in a stringer pallet, therefore if you pinwheel a load, you must have a forklift and another operator to load that pallet vs.

having the selector load.

Often times have to be adjusted several times a day to adjust to the variety of notch sizes and positions. This is a major factor when grabbing pallet from 30 ft. in the air. The hardwood stringer in unsupported racking tends to fail in the freezer faster than the CHEP style stringer due to cracking. A small crack in a hardwood stringer will progressively fail as the wood freezes. The weight of the load will determine the degree of the damage up to failure.

I am all for standardization of pallet design whether block or stringer.

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**Re: Grocery User Rumble by Fast Freddie**

I think that from the versatility perspective a well designed block pallet works better in many application especially when turning pallets sideways in trucks and trying to unload with pallet jacks.  
-FF

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**Re: Grocery User Rumble by Thoughtful**

GU, I really appreciate your input and would rather read it than write. However, on the block pallet matter, may I ask in your main business base 1) what percentage of blocks do you use compared to stringers 2) to what degree do blocks work or not work on racking 3) do you use any blocks in the cold store 4) do you use CHEP block pallets 5) do you keep your blocks 'in house' and ship on stringers? I agree with your thoughts on standardization. It has to happen, but that is another issue. I'm looking forward to the continuing 'Rumble' discussion.

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**Re: Grocery User Rumble by GU**

The pallet mix is heavily weighted to CHEP, probably close to 75% saturation. Obviously, the vast majority of those are block vs. stringer. The remaining pallets are white stringer, with a very small percentage of odd size white. Plastic is primarily used for shipments to retail outlets in grocery. Plastic pallets are not used in perishable and frozen operations because they just do not work as well as a wood pallet. In these operations, wood pallets are used - mostly block.

The block pallet works great in racks and the retail outlets love them. Easier to access with trucks, higher profile than standard white stringer pallets, and damaged blocks less likely to collapse. In other words, if a block fails, it tends to hold together whereas a stringer may collapse enough that makes it very difficult to access with a truck. Then you have to have people go up and recover the product. Unloading is easier at retail outlet since all four sides are compatible with straddle stackers, especially when pin wheeled.

Blocks are used extensively in the freezer. In fact, we try to not use white stringer pallets at all. The CHEP stringer has proved to be better than the white stringer in the freezer, but still prefer block. The block pallet is also easier for the receivers to inspect for damage and vermin.

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**Re: Grocery User Rumble by Thoughtful**

A helpful reply, thank you. There are two more questions I meant to ask earlier. 1) Do you use pallet load transfer equipment in your ops and 2) What is the maximum load capacity required for your block pallets as opposed to hardwood stringers?

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**Re: Grocery User Rumble by GU**

1. Yes. Still have lumpers especially on perishable side.
2. The block is CHEP so I believe it is rated 3,000#. If we get to spec a vendor stringer hardwood pallet, we ask for a minimum of 2800 # unless there is a special need for a specific product. Very rare. GMA spec configuration. If a hardwood block is being speced, I ask the spec to be equivalent to CHEP block. Usually use the PDS program.

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**GU Rumble Round 2 by DS**

You make some valid points, GU, but you're missing the main idea...don't pay the Illinois vendor \$6.35, offer to pay him \$3.00, or \$2.50. A vendor from Virginia is only paying \$5.00, so offer him \$2.50, or \$2.00. Set a strategy to pay "half" the market value for a GMA #1, and pay nothing for any pallet not meeting quality standards that you set. Never pay freight to sell pallets out of your local DC market. If there are no major shippers in your DC market, then work a deal with your local recycler that makes sense, i.e. maximizes your revenue while maintaining an efficient operation. Then factor your revenue potential into your payment strategy, i.e., don't pay half if you can't get half. Or, better yet, only pay \$.20 per pallet less than what you can get, giving yourself a margin to cover your administrative costs and your occasional damaged pallet, and create a positive variance in your operating expense budget.

Don't take a big bang approach. Work the issue from a bottom up perspective, i.e., start with your worst offenders on poor quality. If they balk, then use the hammer. It doesn't need to be an administrative nightmare if the process is well planned and managed. As the buyer, you are in a position to completely control the process to ensure that only positive results impact your bottom line.

The block pallet will become a feasible alternative after the new paradigm is in place, which will eliminate the current barrier of initial investment cost. The added value the design brings to your operation will be the incentive for considering the transition costs involved, and if enough supply chain participants see similar value potential the transition can occur.

Your thoughts? Did you save my e-mail address?

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Re: GU Rumble Round 2 by Under ground cheese Co.

Dave,  
You make some very good valid points. I think your shared cost plan makes all the sense in this crazy pallet world. If GU needs a vendor, I'll send him my email address.

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Re: GU Rumble Round 2 by GU

This strategy does work with many vendors but is not across the board. Some vendors will not budge from their price. The vendor will cover the pallet cost in some manner, add to case cost, reduce CPU rates, dock unload incentives, etc. The buying group can be helpful in negotiations with a vendor on pallet pricing due the the millions of \$ of product they are buying. Remember, they are looking at case or unit pricing out 3 to 4 zero's. 100th of a penny may be a deal breaker and the pallet part of the pricing may be the difference.

Freight is also negotiable. You can build that into the pallet price, create freight lanes for carriers, especially local carriers, and fleet hauls. Unfortunately, pallets are not a deal breaker with a buying group so we are somewhat at their mercy because they are protecting their bottom line.

Actually, our goal was never 1/2 of value, it was to get the pallet for free. We accomplished this with banking, full load exchange, and working with transportation fleet and general carriers to achieve this. In many instances, the pallet was a means to an end to get more revenue out of another part of the operation. Again, part of pallet management is to understand the total logistics picture and to integrate each piece in the best possible way to increase the bottom line and reduce cost.

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GU Rumble Round 2 by DS

GU, you are absolutely right when you say that the total logistics picture must be considered when evaluating pallet management processes and performance. Are you familiar with the "Cost-To-Serve" pricing model? Some trading partners are involved with this type of pricing process, which takes the smoke and mirrors out of pricing, particularly regarding logistics costs. Freight, CPU allowances, pallets, lumber costs, even pallet patterns can be addressed effectively and to the benefit of both trading partners.

You say that you have achieved free pallets through banking, full load exchange and working with carriers...I'm not following this train of thought. With banking and full load exchange, are you not returning pallets to the vendors? This may be free use, but not free pallets. I consider a free pallet as one that you get for nothing and you can do as you wish with it, i.e. the #2's and junks that make up 63% of your inbound white wood. Don't get me wrong, I think full load exchange has merit, although I believe there are some inherent inefficiencies that are difficult to overcome, and the

administrative complexity can also be a challenge. Also, even if perfectly efficient, it can never be profitable.

And thanks again for your participation in this exchange of perspectives. The participation of other interested parties is not a "tag team" approach by me and some buddies, I assure you. The public debate was your suggestion, and I applaud your follow-through.

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#### Re: GU Rumble Round 3 by GU

After I posted, I got to thinking about the word "free". Nothing in this world is free so I probably used the wrong term. Look at it this way, if I can bank pallets to a vendor, I create freight revenue for back haul or take advantage of CPU allowances, or get the vendor's carrier back home. If the vendor's pallet prices are high, then I can reduce the cost of their pallets by supplying pallets that cost me significantly less than outright purchase of their pallets. Based on the incentives in place, I can often break even or at times make a little money.

Bottom line, our core business is not to manage pallets. That is not what we do best. Distribution and transportation systems are going to third party operators because of many factors. Why not pallets? There is a tremendous opportunity for the right operators to go into major corporations and look at their total logistic network and come up with the best, most cost efficient process(s). One thing I am certain of is that there is no "one size fits all" program out there. There are inefficiencies in the CHEP process, the B.U.S. process, white wood process, IFCO process, PECO process, what I have done over the years, I could go on and on. However, the role of pallet professionals needs to evolve to be able to go into these corporations and study their networks on a national, regional, and local basis. Pallet experts would review a customer's vendor relationships and develop a multi-front approach to manage pallets. I know for a fact that the CHEP model works extremely well for some in our company, not so good for others. Plastic pallets, captive pallets, pallets used in closed loop operations, slave pallets, leasing programs, and yes, even the B.U.S., can all work for the same corporation if managed correctly.

I do not wish to go back to the days of managing pallets for all of our vendors. It is inefficient, expensive, time consuming, and better left for someone else. That is a major advantage of working with CHEP. They deal with those problems, not me. They deal with the depot problems, not me. They deal with the quality problems, not me. That is a significant service and in itself when you multiply people doing this in all of our company facilities that would have to deal with each vendor on an individual basis, this is a tremendous savings.

I do not consider this discussion a "tag team." I would hope that this sheds some insight for those that may be less informed. Times are changing. Just remember, CHEP is a pallet management company. It is the members of the NWPCA that make the pallets happen for CHEP. You know, General Patton defeated Rommel in WWII because Patton studied Rommel, got to know Rommel and his tactics, devised a battle plan to counter those tactics, and defeated Rommel who was considered the greatest tank warfare mind of his time. You must know your enemy to defeat your enemy.

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#### GU Rumble Round 4 by DS

Again, as has been the norm, you make some very solid points, GU. And thank you for the vote of confidence in the B.U.S. Process. I would like to share some food for thought on the 3rd party issue. Being an engineer by training, and while not from the great state of Missouri, I have always been a "show me" kind of guy. The 3rd party mantra "outsource so you can focus on your core business" never sold me. Don't get me wrong, I am a major supporter of outsourcing transportation and warehousing, where the opportunity to dramatically reduce costs, through consolidation of activity among multiple parties, actually occurs. A dedicated DC operated by a 3rd party makes no sense to me whatsoever. Pallets, I believe, are not a good fit with the 3rd party management concept. Consolidation of activity for efficiencies isn't an opportunity as in transportation and warehousing, and 3rd party management of assets only works if the assets are in the possession of the 3rd party, as in warehousing. Again, my view on the 3rd party concept.

I also have no interest in going backwards in time. I agree that your role should not and cannot be to manage vendor's pallets for them. I also agree that all companies that utilize pallets, vendor/shippers, distributor/retailer/receivers, 3PLs, have a tremendous opportunity to improve operations and reduce costs if they would undertake an initiative to assess the total impact of pallets and identify opportunities for improvement. In previous posts, we have discussed the role that trade associations could play in facilitating industry wide initiatives. These could help and encourage companies to undertake such efforts internally and with their trading partners. I will continue to encourage the GMA and FMI to commit resources to a pallet initiative; however, my voice is not very loud, if you get my drift. Your voice at the FMI would be heard, and I know that GMA listens intently to FMI.

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**Everybody wins in the pallet rumble by Rick LeBlanc**

DC pallet management isn't rocket science, but cost determination tends to get a little murky at times. The pallet touches has cost implications for such a wide variety of activities. How these costs are weighted can vary depending upon the processes and priorities of the user. And as GU has explained, a well managed pallet system tends to become more complex as it evolves over time to eliminate inefficiencies large and small. As such, there isn't one single "system" that holds all the answers. There is no one approach which replaces active DC pallet management in operations - whether in-house or through a 3rd party. A big part of the solution is just getting management resources on the front line. This should include getting the executives, as Dave urges, to become committed to improving the system. It seems to me that the grocery system is evolving from a simplistic notion that the system was going to turn totally blue or totally blue and a #2 rental color, to a point of pallet users now trying to determine how the blue and white can best work in unison to give them a better bang for their pallet buck. Stay tuned.

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**Re: Everybody wins in the pallet rumble by GU**

As far as pallets, I think there is some misconception about the word "asset." Pallets are an asset that are here today and gone tomorrow unless they are in a closed loop or tightly controlled system. That is the nature of the logistics of the food business. There in lies one of the reasons companies do not manage them as an "asset", and just manage the cost of the pallet to reduce their liability on the bottom line.

If I make the investment in a new block pallet, or any pallet for that matter, do not make every attempt to keep them in house, chances are they are gone in no time at all to some other company for them to use on my dime. If I invest in a truck and trailer, it comes back for repeated use. Why would I want to invest significant amounts of capital in an "asset" that is here today and gone tomorrow, yielding a negative R.O.I.? That is one of the main reasons companies spec across the board. Chances are they will never see the pallets they purchased again, so why not purchase the spec that will just get buy at the cheapest cost? Once it is out the door, who cares?

You can just look to CHEP and any one else that has tried to manage grocery pallets on a large scale. Most have failed. CHEP has lost millions in lost or out of network pallets since they have been in this country. CHEP has found that this country is not Europe and that monopolies are not going to be sanctioned by government or trade associations.

With margins as small as they are and the ever present Wal-Mart, everything that can be done is being done to reduce cost and to move capital dollars to the "core" of the business; meaning stores and the customer. Capital dollars are moved to where they can give the most R.O.I. Sorry guys, pallets are not one of them.

I think Rick's post (great post Rick!) has hit the nail on the head and there in lies the third party opportunity. Blue and white can co-exist. Understand as I am sure that you do, each branch of a food company has its own priorities and is responsible for their own bottom line. When these groups sit down to discuss their individual needs, they are often very polarized in their mindsets. They only care about their slice of the pie. However, if someone comes in with an unbiased eye, learns the customer's pallet flow, and is willing to integrate a pallet management program with leasing, sales, captive, plastic, etc., and can bring to the table the integration of these programs to reduce the cost and increase the efficiencies of the logistics chain, I will guarantee that you will get the attention of senior management that have the power to implement the new "paradigm".

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**GU Rumble Round 5 by DS**

Rick, welcome to the fray! I absolutely agree with your assessment that the grocery system is evolving to an environment in which multiple processes will co-exist as user companies in the supply chain define the optimum mix to fit their unique circumstances and strategies. While I am clearly in my sell-mode in this debate, I am very supportive of a competitive environment. That's how problems are solved, performance is improved, and progress is made.

A few comments on executive leadership...two scenarios are relevant: 1.) internal, company specific initiatives, and 2.) industry level initiatives. Internally, I challenge middle management to make a case to executive decision-makers. If a middle manager makes a case that the company could save millions of dollars annually by investing some resources in a pallet initiative, executives will listen. How many of us are familiar with projects where millions are invested in software "solutions", and two years later the CEO asks "where's my payback?" I see a pallet initiative as a breath of fresh air...a project with tangible objectives and real bottom line impact. At the industry level, let's consider the history. GMA and FMI have funded pallet initiatives in the past, and frankly these projects have not delivered results. In my

opinion, these efforts have been well intended, but poorly executed for a variety of reasons. One major reason in my view is inadequate funding resulting in a weak effort. Hiring a consultant to send out a survey, compile the results then write a report with some try harder do better recommendations won't get it done. A hurdle we have to overcome is priorities. Both of these trade group's logistics and distribution committees are consumed with the latest and greatest buzz...RFID! Don't get me started on this one...

GU, a few comments on the asset issue. Some companies do treat pallets as an inventory asset on the balance sheet. Let's use your truck and trailer example and think creatively about a comparison. You buy a truck, use it, then sell it when you no longer have a need for it, or you want to upgrade, correct? The same logic can apply to pallets, just on a very different timeline. And, again, you can buy the pallet for a price below your resale price, therefore a positive ROI, not a negative one. Here's another comparison for you to consider. You buy product from a manufacturer at wholesale, inventory the product as an asset, then sell the product at retail for a profit. Why not treat pallets the same way? Again, I can make a case that a pallet program designed to employ the B.U.S. process can deliver a positive ROI and compete successfully for those capital dollars. Give me a seat at the table and I'll deliver a compelling case for senior management to consider.

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### Into the fray by D'Artagnan

GU and DS thanks for some great conversation.

After one of the earlier posts, I went looking for the B.U.S. site. It was a little harder to find than I expected. I believe I have read the entire site and have more questions than when I started. DS or GU I would like to hear your separate answers to these questions. I am not a Wally World recycler and the core crunch is nearly unbearable around here, so I am interested in any alternative system that may change the market.

The exchange system is non-existent in my area; other than banking, is it alive and well elsewhere?  
 Wasn't it the mistrust within the grocery industry that killed the exchange system?  
 Wouldn't a CPC style model already be in place in the U.S. if grocery manufacturers trusted each other?  
 Isn't the transfer of ownership of the pallet concept already in place?  
 Why would the manufacturer, sell the pallet at a discounted price if they already have accounted for it?  
 Or are you saying the grocery manufacturers get to charge for the pallet twice?  
 Don't manufacturers already pass along this cost?  
 Wouldn't this just be taking money out of their pocket?  
 Isn't the distributor/retailer already selling to pallet recyclers?  
 How does this program differentiate itself from pallet banking?  
 What becomes of pallets that are used in downstream applications?  
 If this is a 'win-win' for all trading partners, how does the grocery distribution center benefit?  
 Why would the grocery distribution center pay for the pallet?  
 I'm guessing that you are expecting more money from the recycler? Is this to be a better pallet? Always a new pallet?

In order for the system to work for everyone in the chain, it seems to start with more up-front money... then you are back to the issue of trust.

Will the BUS model work on a limited scale? I think outside markets would spoil the party without some serious large scale participation, or am I jaded?

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### Re: Into the fray by DS

The exchange system is non-existent in my area; other than banking, is it alive and well elsewhere?  
 Answer: Yes, particularly the foodservice channel, although still a significant presence in grocery.

Wasn't it the mistrust within the grocery industry that killed the exchange system?  
 Answer: Not really mistrust, more like mismanagement, and truck drivers making beer money.

Wouldn't a CPC style model already be in place in the U.S. if grocery manufacturers trusted each other?  
 Answer: I assume you mean manufacturers and retailers, and again the problems are not trust as much as other "factors."

Isn't the transfer of ownership of the pallet concept already in place?

Answer: Depends on your interpretation. Some shippers offer to sell the pallet at full cost. Some give it away and "absorb" the cost in operating expense.

Why would the manufacturer, sell the pallet at a discounted price if they already have accounted for it?

Answer: Depends on your definition of "accounted for it". In an exchange program, the receiver is giving back an equal value pallet, and the cost to the shipper is a net zero in theory. Same is true in a bank program, in theory. In a real world exchange program, a trucking company is involved. Due to poor management, it must cover pallet "losses" by increasing rates. Eliminating exchange reduces freight costs which more than offsets the discount.

Or are you saying the grocery manufacturers get to charge for the pallet twice?

Answer: No.

Don't manufacturers already pass along this cost?

Answer: In theory, all costs of doing business are included in cost of goods. On a bad day, costs exceed revenue and the red ink pen comes out. Thus it behooves both seller and buyer to find more efficient processes that lower total costs, so both P&Ls can benefit.

Wouldn't this just be taking money out of their pocket?

Answer: No, because in the exchange scenario, freight savings exceed the pallet discount.

Isn't the distributor/retailer already selling to pallet recyclers?

Answer: Yes, but in most cases, dramatically fewer pallets at lower prices due to lower quality.

How does this program differentiate itself from pallet banking?

Answer: Pallet banking has many good attributes, i.e. it eliminates the dock exchange "problems." It is an "unbalanced" solution in that the economics favor the shipper. It is also "inefficient," in that it requires unique, trading-partner-specific administration, and depending on the replenishment program, can be freight intense.

What becomes of pallets that are used in downstream applications?

Answer: Depends on the current application and the impact of the revised flow of pallets inbound to the DC. A B.U.S. program increases the inbound flow of good quality pallets at a favorable cost. Utilization of these pallets can be via downstream applications or market sales. If current downstream applications use pallets, this just becomes a more economical source of good quality pallets.

If this is a 'win-win' for all trading partners, how does the grocery distribution center benefit?

Answer: The DC gets a guaranteed quality pallet at a below market price, reducing operating costs and improving white wood quality therefore improving productivity.

Why would the grocery distribution center pay for the pallet?

Answer: Paying for the pallet provides legitimate leverage to address the quality issue.

I'm guessing that you are expecting more money from the recycler? Is this to be a better pallet? Always a new pallet?

Answer: Not more money, per se, more flexibility in pricing. A menu approach to pricing that differentiates between resellable, repairable, other, etc. This way a DC can recover a fair value for the mix that is coming out as excess inventory.

In order for the system to work for everyone in the chain, it seems to start with more up-front money... then you are back to the issue of trust.

Comment: Not necessarily, but yes in the case where a shipper is currently shipping on #2s and giving them away. This shipper will pay more up-front for a #1, but recover part of the total cost when sold to the retailer. Net cost for the shipper is actually less.

Will the BUS model work on a limited scale? I think outside markets would spoil the party without some serious large scale participation, or am I jaded?

Answer: Yes. The process is designed to be fully compatible with current outside market conditions.

Hope these answers help. Feel free to contact me for more in-depth discussions. DS

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Re: Into the fray by GU

Here goes... The exchange system is non-existent in my area; other than banking, is it alive and well elsewhere? A - We have eliminated exchange with core carriers and regional carriers. Eliminated most dock exchange with national carriers. Some independents that have their pallets involved we exchange. Very little dock exchange.

Wasn't it the mistrust within the grocery industry that killed the exchange system? A - Carriers hated it as they had to do something with the few pallets they exchanged before their next pickup. I hear of a bridge in NY that many pallets went deep six off of that bridge. Introduction of CHEP and now the heavy saturation of CHEP has basically killed the dock exchange, at least in our company.

Wouldn't a CPC style model already be in place in the U.S. if grocery manufacturers trusted each other? A - No. CHEP would like to be the model. No significant movement in that direction by the trade associations that I am aware of. In our free market society, not sure if this is possible anyway.

Isn't the transfer of ownership of the pallet concept already in place? A - Yes, unless on a leasing program.

Why would the manufacturer sell the pallet at a discounted price if they already have accounted for it? A - It's called cost shifting. Moving pallet cost to another expense such as adding it to case cost or reducing CPU/back haul credits. Some "give away" the pallet to eliminate the accounting nightmare with all of their customers, but I am sure they are recouping this cost somewhere else.

Or are you saying the grocery manufacturers get to charge for the pallet twice? A - No. It is all in the packaging. Over the years in dealing with many of our suppliers, I have found most of them priced at a fair market value. There were some that were making money, but we usually refused to pay the price, or got the money back in product or transportation expense.

Don't manufacturers already pass along this cost? A - Do not let them fool you, the cost is there somewhere. Example, when CHEP came along, back haul credits and CPU allowances went to crap. Most told me that was to pay for the cost of CHEP which was more cost than they budgeted for.

Isn't the distributor/retailer already selling to pallet recyclers? A - Yes.

How does this program differentiate itself from pallet banking? A - I do not agree with Dave on this issue. Banking when properly integrated with freight back hauls or creating traffic lanes for carriers is not inefficient and can bring revenue into a DC. Often, this is a good way to sell excess pallets if the vendor is having problems in their area, or if we can provide them cheaper than what they can purchase in their area. The specific relationship is already there as a function of freight negotiations. Can it be inefficient? Yes, where it does not make any sense to do pallet back hauls. However, when integrated in a managed system, one DC can cover the bank of a vendor for another DC in another part of the country and vice-versa.

What becomes of pallets that are used in downstream applications? A - Downstream to me means from the DC to the retail outlet. The dynamics often differ whether a retail DC serving their own company stores, or a wholesale DC serving a variety of retailers. In a retail environment, they usually come back to the DC. Wholesale DCs have the same arrangement to direct sale of the pallet to the retail outlet.

If this is a 'win-win' for all trading partners, how does the grocery distribution center benefit? A - Not sure if it is a win-win. I get a CHEP pallet for nothing, other than the cost of return to the depot. Not sure if the pallet recycler can benefit from the B.U.S. program. I posted that question in an earlier post. We will see what the response is.

Why would the grocery distribution center pay for the pallet? A - Billing back the vendor for bad pallets, rejecting loads for bad or contaminated pallets, billing back the labor and handling charges, or not paying for the bad pallets is the leverage. We have significant fees for bad pallets in place. Why would I want to pay for a pallet and go back to the pre-CHEP days? Not so sure I would. Problem vendors we tell to ship on CHEP, ship on the floor and pay for the unloading, factoring in all of the costs involved in the fees we charge.

I'm guessing that you are expecting more money from the recycler? Is this to be a better pallet? Always a new pallet? A - I want top dollar from the recycler. They are a partner and we come to an agreement we both can live with. I do not and will not change pallet vendors every few months just for a few cents. I know pallet pricing in the area, and I have a good idea of the costs involved from the recycler side. The problem with high end pay back from a recycler is that they usually do not report all of the pallets on the load, have very tight grading standards, etc. In the long run, I feel you are better off doing a fair deal where both parties can mutually benefit. Trust is a must.



In order for the system to work for everyone in the chain, it seems to start with more up-front money... then you are back to the issue of trust. A - To go to a GMA standard pallet, there will be more cost up front because that quality of a pallet basically does not exist. (Please, lets not get into the blame game over this comment) Cores are getting less prevalent, the quality of the cores are getting worse, and the prices are going up. There has been no significant influx of new GMA pallets in the system for years, and it is getting skinny on top quality pallets. Then, if the industry wants the white wood industry to start producing a block pallet, wow, then we are probably talking some real cost increases, especially when there is very limited resources in this country to build this pallet.

Will the BUS model work on a limited scale? I think outside markets would spoil the party without some serious large scale participation, or am I jaded? A - Sure. It may actually be more feasible on a small scale versus a large scale. That is why I argue for 3P pallet management. B.U.S. is not the one size fits all answer. No single program is. Every facility has common but unique needs. There are pros and cons to any system. That is why I would like to see pallet standardization which would help both industries. I would also like to see less tunnel vision in the approach to pallet management.

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**Re: GU Rumble Round 5 by GU**

In today's market, pallet specifications and cost are across the board. The only way I can conceive this plan as having merit is with standardization of the platform so every partner in the logistic chain, regardless of vendor is using the same platform(s) a.k.a. CHEP. I think we all know that we may be out to the distant future before that happens. Anyway, I will borrow your own illustrative example which I have a copy of a presentation you gave a couple of years ago.

Manufacturer buys reconditioned GMA spec pallets for \$5 each. Mfg. uses the pallets, expenses a usage fee of \$2. Mfg. sells pallets under product to distributor/customer for \$3.

So the mfg. is going to take a \$2 hit on the purchase of that pallet or build that cost into the cost of sale of goods. Someone has to eat \$2 in this example. Is this just not cost shifting if the cost of the pallet is not "eaten" by the mfg.?

The distributors buy pallets under product for \$3, use the pallets in operations, sell the pallets to a recycler for \$3. The recycler sorts, repairs and redeploys the pallets, then re-sells back to the manufacturer. Total trip cost \$2.

From the distributor side, I get to use the pallet for \$3 and then turn and sell it to a recycler for \$3. Therefore, my net cost for the pallet is \$0.00, unless I have been charged the \$2.00 in the cost of goods, transportation, or shifted to some other cost that will not show up as a pallet expense. Sounds good to me so far.

I will differ this question to the audience out there in the pallet recycling world. If I were to come to you and say, "you can have all of my cores for a price of \$3, and, I have this manufacturer that will buy that core back from you for \$5, guaranteed sale. You transport them from my facility to yours, sort, repair, inventory, eat the junk or even pay me for the junk, put them on a trailer and transport them back to the manufacturer. You will have a gross profit of \$2/pallet before expenses, would you do this and can you make money on this deal?"

Before you answer, "know that I am going to count every pallet that I put on that trailer of yours to ensure that I am getting every penny I have coming to me (I am managing a pallet as if it were a case of product), and if there are any shortages reported from the load by you, I will bill you back the difference (no cheating on this deal and I have a signed BOL with the count on it that your driver has signed as receiving this amount). Oh and by the way, you will have to spot 10 trailers in the yard to keep up with demand, will have to run up to 24 hours/day, and will have to run on weekends and holidays or provide extra trailers to cover. In addition, your repair standards must be to the GMA spec. Nothing less and NO CHEATING on repair specs or your loads will be rejected by the manufacturer because that is what I have guaranteed them as the quality they will be getting in return. Oh and buy the way, these trailers must be 53 ft. 102 in. trailers so that I can maximize the number of loads going in and out of my facility and to the manufacturer."

Okay boys, the floor is yours in this debate. (I understand that the price of cores or reconditioned pallets stated may not reflect the true cost in today's market. To be fair, use these numbers as if they are today's pricing and realize that a \$2 margin is still a 2\$ margin regardless of price)

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**Re: GU Rumble Round 5 by Rick LeBlanc**

Hey Dave, you are absolutely correct that the grocery execs are blinded by the RFID headlights. Maybe down the road

the need to maintain custody of RFID enabled pallets will drive the need for more intensive pallet management.

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**Re: GU Rumble Round 5 by DS**

Hey, Rick...remember Y2K? When will people learn?

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**Rumble Potential by Thoughtful**

This Rumble series has good momentum, content, contributors and potential.

No. 1. It would be good to see over weeks or months an outcome where points of agreement are listed between GU (a logistics user professional) and Dave and Rick, both professional industry consultants, and any other serious players. The disputed areas can be sidelined for now.

No. 2. Now may I suggest something. I see this unique dialogue as a potential trigger to start a standards movement right at this level. It just takes the formation of a purpose oriented association by purpose oriented individuals, with listed objectives, ideals, solutions, all addressing the problems. If you wait for industry association executives you could be waiting for many years. But they will pay attention to a foundation unit formed by front line people in the know, and can then opt to jump on board sooner rather than later. Maybe I am being too idealistic, but I don't think so. I believe in action.

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**Re: Rumble Potential by Rick LeBlanc**

Thoughtful, thanks for the contribution. I've been on record in Pallet Enterprise since 1992 as supporting standards through a dedicated association. The plan would be to create a single or narrow range of standards, but leave some flexibility in approach to usage (BUS, exchange, Mazza, PAR, lease) - like EPAL. Don't get me wrong, there are lots of hurdles, that many have pointed out to me over the years, i.e., the difficulties of preventing quality erosion or trademark infraction, excessive capital requirements because of a lack of a conforming pool to build from, etc. But I believe that it is the best way to move forward, and these problems can be managed.

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**Re: Rumble Potential by DS**

Rick, and Thoughtful, I just had an epiphany...such an association already exists! It is called VICS (Voluntary Intercompany Commerce Standards). Its Web site is [www.vics.org](http://www.vics.org); VICS has a Transportation Committee which I have connected with r.e. the pallet dilemma. And its executive director is a good friend of mine; I will pursue. Can I get some support from recyclers?

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**Re: Rumble Potential by Thoughtful**

Very pleased at those responses. Difficulties are acknowledged but can be by-passed for the major objective. What do you think GU? Would you be free to do something here?

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**Re: Rumble Potential by Thoughtful**

Dave,  
Just had a look at the VICS organization and feel your purpose could be dissipated amongst general commerce issues and your industry visibility hidden, both of which you do not want. I think you need a separate identity for impact and focus purposes. Special purpose funding can come from interested companies later.

But VICS for connections, support and extra committee members would be good. Just some contributory thoughts.

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**Re: Rumble Potential by Fast Freddie**

Dave,  
I think that an association to standardize AND monitor pallet quality is a great idea.  
-FF

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**Re: Rumble Potential by Thoughtful**

Good point Fast Freddy. Is it sufficient to motivate the recyclers generally to associate and contribute (ideas not money).

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**Re: Rumble Potential by Fast Freddie**

Thoughtful,  
I think that in order for us to standardize and monitor it is going to take some financial contributions, but if we can have our customers appreciate what we are doing; They will be willing to initially pay more, but reap the long term savings.  
-FF

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**Re: Rumble Potential by Fast Freddie**

Folks,  
Looks like ISO has beat us to this idea, they have two pallet standards that are presently under review.

[http://www.iso.org/iso/en/prods-services/CatalogueListPage.CatalogueList?  
ICS1=55&ICS2=180&ICS3=20&scopelist=PROGRAMME](http://www.iso.org/iso/en/prods-services/CatalogueListPage.CatalogueList?ICS1=55&ICS2=180&ICS3=20&scopelist=PROGRAMME)  
-FF

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**Re: Rumble Potential by Thoughtful**

Yes indeed FF, thank you. There are standards out there. For example Australia has had one for many years, and it is a unique size of 1165mm square and takes a 2T working load. It has also been through the process of conversion from imperial to metric. With that ISO (International Standards Organization) post just check the countries involved and be assured this standard will be in metric. The nearest to the GMA 48 x 40 is 1200 x 1000mm, a common size overseas. While there are thousands of pallet sizes world wide, the biggest percentage in use will probably amount to less than 12 standard sizes.

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**Observations for GU (are you here still?) by D'Artagnan...**

GU,  
I suspect from your answer that you are not entirely familiar with the CPC style program. I only have a cursory knowledge the system, so I would not be the best to explain it. There have to be some Canadian guys on the board that can help us out and fill in the details.

You said in your gracious answer to my questions that "B.U.S. is not the one size fits all answer. No single program is." I suspect that the ability to buy and sell and even privately lease and manage loops for others that the CPC comes far closer. This flexibility gives the pallet user more flexibility than any program out there. The grocery industry's study from the early 90's indicated that industry cooperative pools provided the lowest cost per trip. That seems to be more of a win-win.

Your answers on my questions about the BUS system were as I expected. You see the holes in the BUS system that I do. You stated that you would "like to see pallet standardization which would help both industries." An industry cooperative model provides that standard.

What are your thoughts?

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**Re: Observations for GU (are you here still?) by Thoughtful**

Good One. There are standards (and I use the terms loosely) in hardware (pallets) and software (systems), a significant difference. You are talking about a system. I am impressed with the CPC system because it is an established and operating industry co-operative for some years, and I think unique. I too look forward to input from those who know, and GU, of course.

---

**RE: Re: Observations for GU (are you here still?) by GU**

The CPC cooperative was the brain child of the grocery industry in Canada. They are the reason that it exists today. I'm not so sure that US grocers have that much ambition to do a pallet cooperative on its own. I think it would have to be driven by a pallet association with strong lobbying with the trade associations such as FMI and GMA to even have a chance of making it happen.

It is my understanding that CHEP has made significant inroads in Canada giving CPC a run for their money, but I am not well versed on the subject to comment. The public information indicates that CPC has about 8 million pallets in service, which quite honestly is not very many in terms of the requirements for the needs in this country.

Could a pallet cooperative work in this country? In my opinion, the answer is yes. However, one of the main stumbling blocks is money. A huge investment would be required to pull this off and get it going. In addition, you would have to get the buy-in from the grocery industry.

If the CPC model is followed, the grocery industry would have to pony up membership dues, which is not a part of their current culture as it relates to pallets. There would have to be strong selling to the industry to prove that by converting to a cooperative system that there would be significant value added and reduction of the overall cost of pallets to the industry. The cooperative would also have to prove that the current CHEP rental program is significantly inefficient and not cost effective to even begin for them to move to another alternative en masse. If you think that CHEP would just roll-over and play dead, you would be fooling yourself. They would be very aggressive in pricing to retain their market share.

There would have to be a major re-design of the current business practices and business models in the pallet industry. Pallet folks would be required to sing out of the same hymnal across the country, and I think that making that happen without strong pallet association leadership would be very difficult. There may even be some federal regulations involved here in the USA that are not in place in Canada that may actually limit or significantly restrict a cooperative of this type. I am not a lawyer, so I do not know this answer.

The standardization of the pallet, the new build and repair standards of the pallet, the standardization of software services, licensing requirements, participation fees, the reported savings in cost per trip could be a huge benefit to both industries. But it would take a huge investment just to get the software part of the equation up and running so that it can "talk" with all parties. And then, there is the dreaded RFID piece of the pie and who knows where that will ultimately end up, and it sure will not be cheap to implement.

So I am with you on the cooperative issue that it could potentially work in this country, but there are probably more questions than answers at this point on how to get it from conception to reality in the USA.

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**CHEP - GU by Stubborn**

Based on the current environment, you cannot convince me that CHEP is a good or better alternative to white wood, PECO, plastic, etc. They appear to be a company in decline. Why would you want to get in a contract or relationship with a company that appears to be economically strapped?

What contract cannot be broken if the company fails to keep up its end of the bargain?

For all those wondering how I come to this conclusion, go look at some CHEP pallets or go to the depots and ask what is CHEP's latest repair percentage.

Doesn't it make you feel good that your dealing with a company that changes their repair standards based on supply, economics, etc.

---

**Re: CHEP - GU by Standard and Poors**

And the perception is the white wood industry has no standards. I would like to see CHEP explain how they change their repair standards to their customers. Do you think it would go over well?

---

**Re: CHEP - GU by GU**

What CHEP and PECO have going for them is the lack of cohesion that exists in the white wood industry. You guys would rather cut your neighbors price or throat to make a buck instead of becoming united against CHEP, PECO. As long as you guys squabble over pennies, CHEP, PECO will make the dollars.

---

**Re: CHEP - GU by Standard & Poors**

I understand what you are saying, but it is tough to understand cohesion from CHEP. It continues to change upper management. It has always had turnover with middle management, and recently have gotten into the white wood business. Is this cohesion? When something is cohesive it sticks together, works well together, doesn't change much.

---

**Re: CHEP - GU by The Real GU**

I did not post this. Someone has used my handle.

---

**Re: CHEP - GU by Fast Freddie**

Well put GU, I am in the white wood market, and lost a major account to CHEP last year, but I will be looking to show them an alternative when the opportunity presents itself.

The alternative will have to be a block pallet! The service and pricing will have to be better; not that this lacked when we serviced the customer! It will require a major investment in a pallet "pool" for me to be able to service the customer!  
-FF

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4



# Recycling Record

The Pallet Profile's monthly answer to the recycling industry.

## Missouri to Host Pallet Trade Show

The Midwest Forest Industry Show will be the leading trade show of the pallet industry in 2005. The biennial trade show, which is sponsored by the Missouri Forest Products Association, will be held Sept. 23-24 in St. Charles, Missouri.

The Midwest Forest Industry Show is one of the nation's largest showcases of sawmill, logging, pallet and related manufacturing equipment, supplies and services.

This year's trade show will have an expanded educational program and increased public relations campaign and also will offer a national loggers competition.

For information about the show, including visitor registration and exhibitor services, contact the Missouri Forest Products Association at (573) 634-3252 or visit the Web site at [www.moforest.org/mfis/index.html](http://www.moforest.org/mfis/index.html).

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## FIRST SORT

### Emerging Phytosanitary Issues: Mark Removal Raises Concern for Some Recyclers

By Chaille Brindley

Some pallet recyclers are discovering that there may be unexpected costs and even a disadvantage in the market by being certified to heat treat wood pallets. Beyond just the treating itself, recyclers in the U.S. that are part of the official treatment program must also remove marks from repaired and re-assembled pallets regardless the destination. Companies outside of the program are free to do whatever they want to do, which has some

recyclers questioning the effectiveness and fairness of the current requirements.

"Mark removal is not a popular regulation among recyclers," said Jason Robison of Timber Products Inspection (TPI), Conyers, Ga. TPI and Package Research Laboratory (PRL) of Rockaway, N.J. are the two largest certification agencies for the pallet heat treatment and fumigation programs.

(Continued on page 2)

## IN THE MARKET

### Recycled Pallet Market

Supplies of cores have been steadily tightening the past 18 months. The trend seems to have no end. Core supplies are so tight it seems impossible they could get any worse. Contacts made the same observation a month ago, and the supply has gotten worse.

In markets where seasonal demand is at its peak, recyclers have been forced to reach farther away than ever before just to meet the demands of their primary customers.

Core supplies are extremely tight in all regions east of the

Rockies. Recyclers report core availability ranging from tight to critical in virtually all Eastern markets. The fact that supplies continue to tighten is disheartening to many.

Some areas are reporting core shortages are so severe that even #2 GMAs are beginning to reach critical levels.

The percentage of #1 GMAs in the inbound core supply is in steady decline as the size and quality of the available pool of recyclable pallets continues to decline. The lower per-

(Continued on page 4)

## Emerging Phytosanitary Issues: Mark Removal Raises Concern...

(Continued from first page)

Jason said that many recyclers point to operations down the street that are repairing certified pallets and not removing the marks. Sometimes these pallets are being sold as certified for export. Sometimes these pallets are just sold as regular used pallets. But if a recycler is not part of the official heat treatment or fumigation programs, there is little the inspection agency can do to force them to remove the mark.

The heat treatment certification program falls under the oversight of the American Lumber Standard Committee (ALSC). Tom Searles, president of the ALSC said, "We can only control what we can control. And we can't control anyone outside of the program." Searles indicated that it would require the federal government to take action in or order to create a mechanism for those outside of the program to be regulated.

While some recyclers feel that the current regulations put undo burden on those within the program, Dr. Edgar Deomano, the technical director of the NWPCA, agreed that it was necessary even though it isn't perfect yet. Edgar said, "We're still looking for a better workable system. The ALSC just wants to maintain the integrity of the program."

The mark removal issue hasn't become a major factor for fumigation certification yet according to Dave Dixon, president of PRL. It could become an issue in the future depending on how it all shakes out.

Dave agreed that it may not be fair that recyclers outside of the program do not have to live up to

the same standard. But he said that mark removal for repaired and re-assembled pallets is just part of doing business if you are going to be officially licensed. Dave explained that the inspectors do not want somebody to take a mark and put it on a possibly infested pallet because the investigation will come back on the entity with the mark, not the real culprit. This makes enforcement difficult and could jeopardize those acting in good faith although they might be cleared in the end.

Removing marks may seem like a little thing to some, but it requires manpower and can cause other problems. For example, the most common way to deal with the problem is to paint over the mark. However, some pallet recyclers supply customers that require unpainted pallets.

In addition, recyclers note that the requirement to remove marks is vague and not clearly spelled out in the ISPM-15 standard or ALSC enforcement regulations. They suggest the lack of clarity could lead to problems in enforcement.

ALSC seems to agree that more detailed mark removal requirements should be added to the official policies and not just the inspector guidelines. Tom indicated that the issue would be dealt with in the ALSC Enforcement Subcommittee meeting in August. He explained that the process has to be somewhat evolutionary because those behind the enforcement regulations cannot foresee every possible issue in advance. Tom indicated that more detailed mark removal procedures will be written into the regulations in the

near future.

Jason of TPI said that pallets repaired by adding a nail or hammering nails back into place do not need to be re-certified or have the marks removed. This also goes for pallets that simply flow through a repair facility and are not repaired at all. But the opposite is true if the pallet has any lumber added to it, such as a broken deck board is replaced or companion stringer is added. Even if you replace with a heat treated board, the mark must be removed. And if you want to sell the pallet as export certified, it must be completely re-treated and re-marked, even if you use only heat treated lumber in the process.

Dave of PRL said that if you disassemble the pallet and intend to use the lumber for packaging or other uses outside of your company, then you would need to remove the mark first. Recyclers would not have to remove the mark though if the lumber is going to be thrown in the grinder. Dave said that mark removal is important because you can't guarantee what the next person who gets the pallet is going to do with it. The recycler that repairs the pallet may not intend on shipping it to a foreign country. But what happens down the supply chain is anybody's guess.

In the end, it seems like all those within the certification system just want everyone to play by the same rules. Now the big question is: how can we get that accomplished? Given the large number of recyclers outside of the program, many of whom are not aware of the regulations, this

(Continued on page 4)

## Recycle Record — United States Hardwood Recycled Pallets

The following information describes the conditions and prices prevalent in the hardwood recycling industry. Information is reported for states and statistical reporting regions where we have enough data and input to feel comfortable with our analysis. Statistical reporting regions will be added and deleted when there is a change in available dependable data.

Our #1 and #2 pallet prices are the typical delivered 48x40 hardwood GMA prices in each region. Our definitions for #1 and #2 coincide with the National Wooden Pallet and Container Association's Uniform Standards for wooden pallets.

Our core prices represent typical prices paid for a used 48x40 hardwood GMA core delivered to the recycler.

Our prices are what we interpret as typical prices reported by our

information network. Even within small reporting regions, price variations sometimes dictate that we publish a middle price within the reported range. We seek to report a middle ground price, not necessarily one of the extreme prices on the spectrum.

Descriptions of inventory conditions help provide an overview of the market in a tabular form.

Percentage of plant capacity utilization represents a measure of pallet activity. Verbal descriptions appear in the Market Report.

Plus and minus signs after pallet and core prices indicate the direction of price changes when compared to the previous month's *Recycle Record* prices. Prices are moved in increments which make comparison meaningful.

No attempt is made to forecast future prices.

Region	#1 48 x 40 Hardwood GMA Pallet Prices	#2 48 x 40 Hardwood GMA Pallet Prices	Typical Core Prices Delivered to the Recycler	Core Availability	% Plant Capacity Used
So. N. Eng.	\$5.40	\$4.00	\$1.25	Tight	95%
Mid-Atlantic	\$6.05	\$4.10	\$2.15	Critical to Very Tight	95%
Virginia	\$5.60	\$3.90	\$1.50	----	----
N. Carolina	\$5.70	\$4.30	\$1.75	Tight	100%
S. Carolina	----	----	----	----	----
Georgia	\$5.40	\$3.80	\$1.50	Tight	90%
North Florida	\$5.30	\$3.40(+)	\$1.70(+)	Tight to Average	95%
Alabama	----	----	----	----	----
Mississippi	----	----	----	Tight	90%
Tennessee	\$6.00	\$4.25	\$2.00	Tight	90%
Kentucky	\$5.70	\$4.00	\$1.25	Tight	95%
W. Virginia	----	----	\$1.90	----	85%
Western PA	\$5.50	\$3.85	\$1.75	Tight to Average	95%
Western NY	\$5.80	\$3.70	\$1.60	Tight to Average	95%
Ohio	\$5.45	\$3.90	\$2.20	Critical to Tight	95%
Michigan	\$5.85	\$4.00	\$1.90	Tight to Average	95%
Indiana	\$5.95	\$4.35	\$2.65	Critical to Tight	95%
Illinois	\$6.35	\$4.70	\$2.25	Tight	100%
Wisconsin	\$5.90	\$4.00	\$1.50	Very Tight	95%
Minnesota	\$6.45	\$5.25	\$2.00	Tight to Average	95%
Iowa	\$6.00	\$4.15	\$2.40	Very Tight	95%
Missouri	\$5.25	\$3.60	\$1.90	Tight to Average	90%
Arkansas	\$5.80	\$3.80	\$1.90	Very Tight to Average	100%
Louisiana	----	----	\$1.85	Tight to Average	90%
East Texas	\$5.45	\$3.50	\$1.90	Tight to Average	95%
Kansas/OK	\$6.15	\$4.50	\$2.25	Tight to Average	85%
Arizona	\$6.20	\$4.25	\$1.75	Very Tight to Critical	95%
No. California	\$6.05	\$4.00	\$1.90	Tight to Average	90%
Pac. Northwest	\$5.80	\$3.95	\$1.85	Very Tight to Critical	95%



## Market Report

(Continued from first page)

centage of #1s available in the shrinking pool of available pallets makes the hand-to-mouth nature of supplying the current market more difficult than ever.

While core supplies are declining, recycled pallet demand east of the Rockies is unusually robust. Activity is surprisingly strong even in view of seasonal expectations. Activity is strong in construction related business and other heavy industrial business. Agribusiness markets are also fueling demand.

Demand is strong enough that many recyclers report record months. Even the softest markets report solid activity levels.

In the West, market conditions are similar. Recycled pallet demand is strong and supplies are thin. Many Western recyclers report that core supplies are so low that they are working with hand-to-mouth supplies.

Supplies of #1 GMAs are in particularly short supply in the West. Core inventories in the West have been at critical levels for nearly two months, and agribusiness markets that lean heavily on recycled pallets are a large factor.

Inbound supplies of #2 GMAs are more mixed than usual. The best reported inbound #2 supplies are below expectations; in some areas where #2s are always in high demand, supplies are nearly nonexistent.

The combination of strong demand and low supplies has strengthened pricing throughout the industry for both cores and ready pallets. Prices for cores and ready pallets are

## Recycle Record Quotes:

*"If you're looking for sympathy, it's in the dictionary between s\*%\$ and syphilis."*

(The Pallet Cynic)

steadier than a month ago continue to press higher.

The combination of higher demand levels and incredibly short core supplies forces recyclers to turn pallets faster than ever. Current conditions require faster circulation of the limited number of available pallets. This further intensifies the hand-to-mouth turnaround cycle that pallet recyclers are forced to perform.

Customer service demands only make matters worse in this hectic climate. Additional services that used to be considered gravy money for the recycler are now done at no charge in order to keep key customers happy and little more. The circumstances have changed so much

that the customer takes these services for granted — a given — in today's recycled market.

Last-minute orders are a growing problem under the pressures of the current market. Although commonplace in today's market, this is one of the many services that customers now view as a given regardless of how complicated accommodating them becomes.

Premium quality recycled pallets remain in very high demand. These premium pallets are higher priced and usually go to the recycler's best customer. So it is no surprise that warehouse or club pallets often are at the heart of the last-minute orders. R2

## Emerging Phytosanitary Issues: Mark Removal Raises Concern...

(Continued from page 2)

seems like an impossible task. The other thing to consider is that as margins continue to be pressed by customers, even some within the program are tempted to cheat. Given the industry's reputation for cutting corners, will this same attitude transfer to treatment? Inspectors can't catch everyone. But if you're part of the official program, and they catch you trying to get around the system, it could cost you big time.

Since those outside of the offi-

cial program do not have to supply compliant packaging, remove marks after repairs or keep records after treatment, it makes sense for users to only buy from licensed companies even when purchasing used pallets for export shipments. Pallet recyclers involved in either the heat treatment or fumigation program should educate customers about the dangers of just being from anybody off the street. Your customers need to know to look for officially certified pallet suppliers. R2

# Supply-chain system costs of alternative grocery industry pallet systems

Charles D. Ray<sup>\*</sup>  
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## Abstract

This paper reports results from a study of the financial components and relative advantages of two alternative pallet load systems: rental and purchased pallets. Through personal on-site and telephone interviews of 13 large pallet-using grocery companies in various regions of the United States, cost variable categories were established and cost ranges were assigned to each category for each system. Simulation modeling of each pallet system was performed, using data randomly generated from the defined ranges of costs. Results of the simulations indicate a statistically significant finding that rental pallet systems are, on average, more costly to the customers through the supply chain than purchased pallet systems, by at least \$1.00 per pallet trip.

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Each year, the wood pallet industry provides over 400 million new wood pallets into a total pallet pool of over 4 billion pallets. Users of these wood pallets face two distinctly different options for acquiring the use of these pallets: they can purchase them, or they can rent them for a cycle through the supply chain, what is commonly termed a "pallet-trip." Since the rise of the rental pallet systems in the United States in the early 1990s, conflicting claims of the cost effectiveness, and especially the true total cost of a pallet in each type of system, have become a source of much contention in the industry.

Claims in support of as well as against the cost effectiveness of rental pallets have circulated among major end-users (The Pallet Foundation 2003). This discrepancy is due to several factors: the perceptual importance of initial cost, the fact that platform managers have different "value" systems, little accurate research on pallet life and quality as related to different customer groups, the impact of pallets that "leak" from given supply chains, and the unquantified costs of asset management. Industry trends in the 1990s and on into this decade have seen most large pallet-consuming organizations trying to "get out of the pallet business" as they seek to focus on core competencies. In this business climate, the attraction of rental pallet systems that take the ownership of pallets and their associated management costs out of the customers' hands found a welcoming corporate constituency.

In the early 1990s, as the rental pallet companies struggled to build a critical mass in their pallet pools and market share, the costs associated with the inefficiencies of existing purchased pallet delivery systems were noted by the industry but

little progress was made to reduce these inefficiencies. Most notably, the pallet exchange system that thrust logistics firms in the middle of the pallet ownership cycle imposed a special source of inefficiency that encouraged unnecessary middle-man costs and profits, and inconvenient service standards. Also, product damage due to poor pallet quality resulting from lack of industry standards drove many pallet customers to seek alternative shipping platforms.

For many companies, the rental pallet companies provided a solid alternative solution. Utilizing a high-quality, low maintenance strategy, the rental pallet providers made significant gains in market share as corporate purchasing agents sought ways to simplify their life. Although this higher quality and service certainly had a cost associated with it, the rental companies spread the cost over the distribution system with

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innovative pricing systems aimed to reduce the front-end charge to the product manufacturers. The net result for many pallet customers in the supply chain was decreased pallet cost with improved service and pallet quality. As the rental systems reached critical mass and landed large corporate customers, many other companies changed ships and signed contracts with rental pallet providers, and began divesting themselves of their supporting overhead for management of pallets. However, the special requirements of participating in rental pallet pools related to pallet asset tracking and accounting carried their own administrative burden.

At issue, then, is at what price the additional level of pallet quality and service offered by pallet rental agencies comes to the users. Vertically integrated corporations, in particular, which realize the entire cost of the pallet through the supply chain, have begun taking hard looks at the total "system cost" of their pallet usage. In order to provide an objective analysis of the product/service options to these large, important industry customers, this study seeks to quantify and compare "total system costs" of rental and purchased pallet systems.

The primary objective of this study was therefore to provide a current, accurate, and objective analysis and comparison of the relative system costs of purchased pallets and rental pallets as they were marketed in 2004. A secondary objective was to establish a standard methodology and user-friendly tool by which future pallet system cost analyses can be conducted.

### **Review of pallet costing research and tools**

Most of the available literature on pallet cost is focused on estimating the manufactured cost of pallets. The most extensive work has been done by Palmer et al. (2001) who developed the Pallet Costing System (PCS). This software product "computes the total and per-unit cost of manufacturing an order of wood pallets." PCS allows the user to consider typical manufacturing costs (i.e., raw materials, labor, fixed machine costs, and overhead) in the light of current market demand to establish a selling price for the manufactured pallet product. PCS also allows sensitivity analysis to be run on alternative raw materials, labor costs, and manufacturing configurations.

Various pallet equipment manufacturers also offer pallet manufacturers tools to estimate manufactured cost. For example, Automated Machine Systems (2005) offers pallet manufacturers computerized tools to calculate and control pallet manufacturing costs, and Forestry Systems, Inc. (2005) with its Yardmaster Premier Pallet System offers the addition of pallet inventory control as well as interface to a barcode-based pallet tracking system.

Anderson and Wisdom (1991) developed a methodology to estimate total usage of grocery system (GMA) pallets in the industry. Using the following assumptions, they were able to estimate that the grocery industry carried a total pallet inventory cost of over \$700 million: 1) 75 million grocery pallets manufactured per year; 2) an average pallet life of 1.5 years and 12 trips; and 3) an average turnover period of product in a warehouse of 3 weeks. Also, they estimated that first-use pallets accounted for roughly 15 percent of the grocery pallets in the system.

As alternative rental pallet systems have become established, the difference in pricing schemes as compared to the traditional purchased pallet systems has gradually created considerable confusion in the marketplace over the true total cost of the alternative pallet systems. Our project sought to

update previous pallet costing studies and provide a meaningful comparison of the two competing pallet systems.

### **Methodology**

The methodology for this project was determined after consultation with industry experts and extensive study of the pallet systems in question. The research team determined that study participation and data collection from a broad-based industry survey would not be comprehensive or robust enough to develop meaningful and statistically significant models. Therefore, the decision was made to base an analysis on cost estimate ranges and simulated data sets.

### **Data collection**

The methodology chosen was to conduct sufficient industry interviews to establish realistic ranges of the various costs of the pallet delivery systems, and use computer simulation to sample from those expert-derived ranges, model the alternate systems, and perform analyses accordingly. Six grocery-industry companies (three in Texas, one in Ohio, and two in Pennsylvania) contributed significant time with the research team in personal on-site interviews, discussing pallet system cost ranges, based both on their own realized costs and their knowledge of costs across their industries. Seven other companies (one in Texas, three in North Carolina, one in New Jersey, one in New York, and one in Pennsylvania) were interviewed by telephone and helped fill in some holes from our on-site interviews of the six primary companies. These companies were carefully selected to ensure representation of the entire supply chain of a typical grocery pallet trip.

It must be understood that all references to pallet costs in this study refer specifically to *system costs*, or the cost of a pallet in usage to the customers through a complete cycle of the supply chain, or as is more commonly known in the industry, through a "pallet trip." It was not within the scope of this study to determine actual total costs per different type of pallet, including manufacturing costs, etc. In the context of this study, pallet costs are simply what the pallet users realize as actual costs to them. In effect, it is assumed that total comprehensive costs of the pallets (including raw material, manufacturing, carrying costs, etc.) are reflected in the system cost as charged to the users. In actual practice, this may not be the case; however, it has no bearing on the research objectives or results of this particular study.

### **Process modeling**

*Simplification and variable aggregation.* — One modeling issue that evolved during the study was that of "simplification." The numbers, complexity, and apparent interaction of all the variable components of pallet system costs through the supply chain can easily begin to bewilder anyone who attempts to define the systems. One study participant had identified over 50 different variables in his attempts to quantify the pallet-costing problem. Therefore, based on prior modeling success the authors have had with multivariate evaluation and factor analysis (Zhang and Ray, 1995; Ray et al. (2006), the team began to attempt simplification of the modeling problem by clustering the variables into categories. However, in the absence of "real" data, these variable categories were determined through intuitive process relationships, rather than strict data relationships. Detailed variable costs that appeared to be wholly included in larger, more general cost categories were dropped from the list of variables to be modeled. The

**Table 1. — Alternative pallet system cost categories and data ranges, per pallet-trip.**

Variable	Variable ID	Purchased system	Rental system
Acquisition/issue fee	<i>A</i>	4.00 to 6.00 (used) 9.00 to 11.00 (new)	1.00 to 5.00
Retention ratio	<i>RR</i>	80% to 100%	80% to 100%
Daily rental charges	<i>DR</i>		0.00 to 0.03
Pallet rental basis	<i>b</i>		10 to 60
Transfer fee	<i>T</i>		0.00 to 1.50
NPD surcharge	<i>NPD</i>		0.00 to 0.50
Pallet racking, etc.	<i>Ra</i>	0.05 to 0.20	0.0
Pallet sortation	<i>So</i>	0.02 to 0.10	0.02 to 1.00
Pallet administration	<i>Ad</i>	0.01 to 0.10	0.10 to 1.00
Product damage	<i>Du</i>	0.03 to 0.30	0.005 to 0.02
Return (credit)/cost	<i>Re</i>	(1.50 to (2.50)	0.15 to 0.35

resulting list of cost categories, while not capturing every single cost incurred in pallet usage, does include each of the major costs identified by the project sponsors (The Pallet Foundation 2003). These cost categories, with the data ranges as determined through the project interviews, are listed in **Table 1** and demonstrated graphically in **Figure 1**.

Based on translation of the developed graphical model (**Fig. 1**), the system cost ( $C_i$ ) for any individual pallet trip in the purchased pallet system was determined to be:

$$C_i = A_i + Ra_i + So_i + Ad_i + Da_i - (Re_i * RR_i) \quad [1]$$

where:  $i$  = simulated iteration, and all other variables are as shown in **Table 1**.

In comparison, the system cost ( $C_i$ ) for any individual pallet trip in the rental pallet system was determined to be:

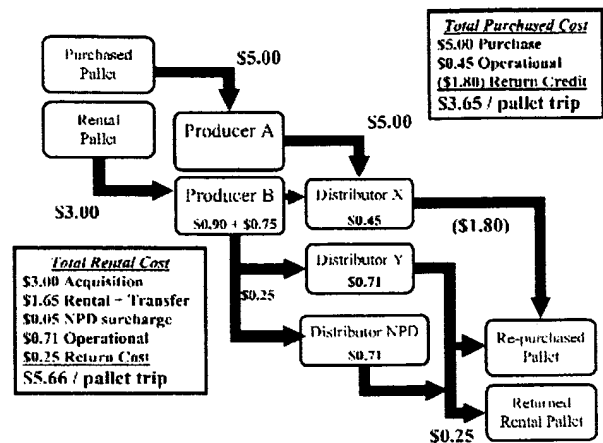
$$C_i = A_i + (DR_i * b_i) + T_i + NPD_i * (1 - RR_i) + So_i + Ad_i + Da_i + Re_i \quad [2]$$

where  $i$  = simulated iteration, and all other variables are as shown in **Table 1**. Justification for the determined Equations [1] and [2] is developed in the following discussions of the individual variable categories.

**System cost variables in the study.** — **Table 1** shows the range of all cost variable categories as they were assigned and utilized to randomly generate the simulated cost scenarios in the study. These ranges were determined through the participant interviews, and validated through follow-up calls both to the participant companies and other industry experts. Each variable category is explained briefly in the following paragraphs.

**Acquisition/ issue fee ( $A$ ):** This is a best estimate of the range of pallet acquisition costs to the product manufacturer. One important issue in modeling the total system of purchased pallets was how to accurately represent the relative proportions of new and recycled pallets used by customers. The solution settled on was to generate one new pallet cost scenario for each nine recycled pallet acquisition cost scenarios. This yielded a simulated pallet system where 10 percent of all pallets beginning a pallet trip were new pallets, that is, 1 out of 10 entered the system at the cost of a new pallet.

We put forward two logical justifications for this approach. The first justification is related to pallet pool size. The National Wooden Pallet and Container Association estimates



**Figure 1. — Graphical comparison of typical generalized pallet system cost models, with one possible set of costs included for demonstration of cost model (Equation [1]). This figure illustrates one of the 228 simulated scenarios used for analysis in the study, with a realized \$5.66 total rental system cost vs. a \$3.65 total purchased system cost in this one scenario. NPD stands for "non-participating distributor" in industry terminology.**

that 420 million new pallets enter the national purchased pallet pool each year. In addition, they estimate that 275 million pallets are repaired and recycled yearly, for a total of nearly 700 million pallets entering the purchased pallet system each year. Furthermore, they estimate that the number of pallets held in storage somewhere in the system to be five times that number, equaling approximately 3.5 billion pallets. This would represent a total of 4.2 billion pallets total in the entire wood purchased pallet system. Since 420 million of those are newly introduced each year, 10 percent of the annual total purchased pallet system would be flowing through the system at new pallet cost.

As a second logical justification, Anderson and Wisdom (1991) had estimated that 15 percent of the pallets in the grocery system at any one time were new (first-trip) pallets. Based on improvements in pallet design since, and the huge increase in the pallet recycling business, it is logical to assume that a smaller percentage of new pallets is now needed in the system.

Based on these logical justifications, 10 percent was settled on as a good rule of thumb, and that number was selected as the percentage of new pallets generated in the simulation.

Finally, the issue fee associated with rental pallets was assigned a range determined by prices quoted in the study. The simulated range of rental acquisition fees as shown in **Table 1** is probably biased low; the first of several variable costs to be biased low for rental system cost estimates.

This choice to bias the estimates favorably toward the rental pallet option was done to improve the statistical power of the analysis. Preliminary cost calculations of the two systems hinted that the rental system appeared to be the higher cost alternative. If statistical measures of significance supported a difference in average prices, even with the assumed higher cost rental system biased low, confidence in the strength of the simulated statistical results could be supported.

**Retention ratio ( $RR$ ):** One of the challenges of this study was to estimate total system cost under different assumptions

of "leakage" from each system. All of the participants agreed that their actual leakage number was hard to pinpoint . . . several had gone through a leakage calculation exercise with their rental pallet provider to settle inventory reconciliation disputes. In this study, an average loss to each system of 10 percent (90% retention) was simulated, with individual scenarios randomly generated between 0 and 20 percent (100% to 80% retention).

*Daily rental charges (DR) and rental basis (b):* This is an interesting cost in that some companies appear to be paying daily rental fees, and others claim that they do not. Those that don't are either turning their pallets very quickly, or generally paying a higher issue fee on the front end. The rental basis is used to simulate the length of time the rental fee is charged, and ranges from 10 to 60 days. As shown in Equation [2], the product of daily rental charges (*DR*) and the rental basis (*b*) is a component of the rental system cost; these costs do not appear in the calculation of purchased system costs (Eq. [1]), for they are not part of the purchased pallet system cost structure.

*Transfer fee (T) and NPD surcharge (NPD):* These are two costs specific to typical rental pallet systems at the time of the study. A transfer fee may be charged by the pallet rental company to the customer as it "transfers" the pallet to the next point in the supply chain; this fee was found to fall between no fee and \$1.50 per pallet. An NPD surcharge is an additional fee assessed to the customer if the pallet is shipped to a "non-participating distributor," that is, a distributor who has not signed contracts of participation in the rental company's pallet pool. Neither of these costs is incurred in purchased pallet systems.

*Pallet racking (Ra):* This cost is associated with downtime and other miscellaneous costs related to pallets causing a disruption in the warehouse flow, usually in automated handling systems. Several warehouse managers commented that one of the biggest advantages of the rental pallets is that their construction specifications result in smooth flow through their system. In fact, no company interviewed could assign any pallet racking costs to the rental pallets. This study reflects that opinion, with \$0 being assigned for pallet racking costs in every simulated instance of rental pallet usage; therefore, variable *Ra* does not appear as a cost component in Equation [2]. The companies in the study unanimously associated this cost with the variable quality and specifications of the purchased pallets. Variable *Ra* is therefore included as a cost component in Equation [1].

*Pallet sortation (So):* This variable reflects the yard/warehouse handling costs of pallets once their loads have been removed and the pallets are being sorted for return. The pallet sortation cost range for the purchased pallets reflects, on the low end, simple forklift/fuel/storage costs for an all-purchased pallet operation, where on-site sortation is not necessary. On the high end, certain distribution centers run their own pallet sortation operations in which damaged pallets are set aside for disposal or shipment to pallet recyclers.

The pallet sortation cost range for the rental pallets reflects the following: 1) on the low end, an operation with all rental pallets, where sortation is not necessary and simple stacking for return is all that is necessary; and 2) on the high end, large distribution centers that have such a large volume of mixed rental/purchased pallets that they have built special sortation facilities on site, manned by up to four employees. Therefore, the cost variable *So* was shown to be a real cost in both sys-

tems and was thus used as a cost component of both Equations [1] and [2].

*Pallet administration (Ad):* This variable reflects one of the most greatest advantages to the purchased pallet system. Purchased pallet systems that do not require tracking of the pallet asset require a considerably smaller investment in administration resources than do rental pallet systems where the customer is responsible for tracking and accounting for the asset.

Many of the companies indicated that this administration cost is coming down as the rental pallet systems mature. This cost area is one that seems ripe for improvement, possibly through the use of technology to eliminate manual tracking counts and reports. However, the cost of the technology may necessarily increase the issue cost of the pallet. A sensitivity analysis on the administration cost range in this study indicates that any technology that increases the rental system issue fee less than \$0.50 a pallet will be a net cost improvement for the customer.

For purchased pallet systems, a lower *Ad* cost range reflects the nature of the purchased pallet systems, with costs and credits being passed through on normal invoices, thereby requiring no unique administrative or clerical resources.

Therefore, since it was shown as relevant in both systems the cost variable *Ad* becomes a cost component of both Equations [1] and [2].

*Product damage (Da):* This variable is one that is a significant source of advantage for the rental pallet systems, which provide standardized pallets for customers that are over-engineered for most applications. Various industry estimates of over \$2.00 per pallet product damage, or 20 to 25 percent of the total cost of the pallet, seem to be taken from extrapolations of worst-case scenarios from a previous non-cited study and allocation of these estimates over an estimate of a total pallet pool that is several times too low. It could also be that the general improvement in pallet quality in the 1990s due to Pallet Design System (PDS) education and competition from the rental pallet designs has considerably decreased product damage costs.

Shown to be a real cost in both systems, the cost variable *Da* becomes a cost component of both Equations [1] and [2]. The ranges of *Da* reflected in Table 1 were settled on by first determining the type of products most frequently damaged, how many times a month a product damage incident was likely to occur, the cost of that damage, and then allocating that across the total pallet volume for that customer.

## Results and discussion

### Simulation of total system cost

In order to increase the strength of the system cost findings, the research team modeled the alternative supply chains according to the variable ranges as discussed in the Methodology section. For ease of use in the industry, the model was formulated in a spreadsheet environment, using Microsoft Excel. A sample set of scenarios is shown in Table 2. Scenario 1 represents a purchased/recycled system; scenario 2 represents a purchased/new scenario; and scenario 3 represents a rented pallet system. This set of scenarios represents 3 of 228 scenarios used to calculate the statistical tests of significance, and 3 of the thousands used for graph generation during sensitivity analysis.

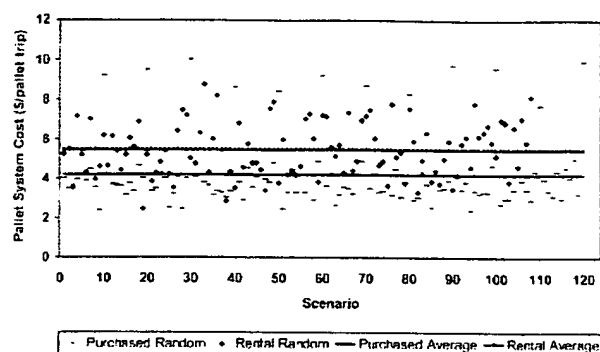
**Table 2.**—A sample set of three scenarios, representative of simulated total cost generation in this study.

Variable	Scenario 1: Recycled	Scenario 2: New	Scenario 3: Rental
Acquisition/issue fee	4.00	9.40	3.20
Retention ratio	0.90	0.88	0.91
Daily rental charge			0.023
Pallet rental basis			45
Transfer fee			0.88
NPD surcharge			0.40
Racking/operational cost	0.094	0.097	
Sortation cost	0.06	0.02	0.387
Administration cost	0.099	0.017	0.64
Product damage cost	0.038	0.072	0.012
Return (credit)/cost	1.575	1.716	0.31
Total system cost	2.72	7.89	6.50

A graphical representation of 228 realizations of the simulated scenarios is shown in **Figure 2**, which illustrates the conclusions that summary statistics in **Table 3** support. The pattern of solid diamonds represents different realizations of simulated rental pallet system costs. The pattern of dashes represents different realizations of simulated purchased pallet system costs. While individual realizations sometimes overlap, the general tendency of the rental data points is to be higher (more costly) than the purchased data points, with the exception of the new pallet scenarios, which are the line of dashes near the top of the graph. The solid lines represent the respective averages of the scenarios; for these data points, the average system cost of the purchased pallets is near \$4.00 (new pallet scenarios included); the average system cost for the rental scenarios approaches \$6.00.

A two-sample t-test assuming equal variances was conducted on the first 228 simulated scenarios, consisting of 108 purchased-recycled scenarios, 12 purchased-new scenarios, and 108 rental scenarios. The 12 purchased-new scenarios were included in the purchased data set as noted in the Methodology section. The test statistics are given in **Table 3**, and can be summarized as follows:

- The average cost of the first 120 randomly-generated purchased pallet system scenarios (including 12 new pallet scenarios) is \$4.07; the average cost of the first 108 randomly generated rental pallet scenarios is \$5.56.
- The variance and SD of the purchased scenarios are higher than those of the rental scenarios. This indicates the higher variability of purchased pallet cost systems, but this effect is due to the inclusion of the new pallet scenarios. Without the new pallet inclusions, the rental pallet cost outcomes are actually slightly more variable, as will be noted in the Sensitivity Analysis section of this paper.
- The pooled variance of all scenarios is nearly half as large again as the mean cost of the pallet systems. This indicates that relative to cost, there are significant cost differentials across different scenarios, another way of saying that pallet system cost scenarios are not very consistent from one scenario to another.
- Hypothesizing a zero difference in the true mean cost of the two systems, we find that the probability of this hypothesis is extremely low (0.0000000000109). Thus we conclude that



**Figure 2.**—Graphical representation of 228 realizations of randomly generated sample scenarios. Rental system realizations are plotted as solid diamonds; purchased pallet systems realizations are plotted as dashes. Dashes near top of graph represent new purchased pallet scenarios as generated.

**Table 3.**—A two-sample t-test ( $\alpha = .05$ ) assuming equal variances on the first 228 randomly generated scenarios. Purchased values include 108 recycled and 12 new scenarios.

Statistic	Purchased scenarios	Rental scenarios
Mean	4.07	5.56
Variance	2.80	1.71
Sample standard deviation	1.67	1.31
Observations	120	108
Pooled variance	2.28	
Hypothesized mean difference	0	
Degrees of freedom	226	
t statistic	-7.432	
P(T<=t) one tail	1.09 E-12	
t critical one tail	1.65	
P(T<=t) two tail	2.19 E-12	
t critical two tail	1.97	

there is, in fact, a significant difference in the means of the two systems.

- Based on a 95 percent confidence calculation of the mean system costs, we estimate the true mean of the purchased pallet systems to lie between \$3.78 and \$4.37, while the true mean of the rental pallet system to lie between \$5.38 and \$5.89. Comparing the smallest and largest differences of these two ranges, we can estimate that the actual cost differential of the two systems is between \$1.01 and \$2.11.

### Sensitivity analysis

The simulation model makes certain leverage points apparent. For both systems, initial acquisition/issue costs are the key driver. Any reduction of the front-end cost to the customer considerably impacts the whole system cost of that option. For the rental pallet systems, the typical transfer fee and administrative costs incurred by the customer are both considerable from a cost standpoint. Elimination of the transfer fee and any system improvement that reduces or eliminates the need for customers to track pallets through physical inventories and paperwork will greatly improve the competitiveness of the system.

And finally, for the purchased pallet systems, the real cost leverage lies with the return credit, or pallet repurchase price.

Any system partnerships or accommodations that would increase "purchasing power" of the pallet recyclers on the back-end, yielding an increased credit to the pallet customer, would greatly increase the competitiveness of these systems.

### Limitations of the study

The objective of the study as specified by the project sponsors was to focus specifically on standard grocery-industry pallets, the main business in which the rental systems compete. System costs of non-grocery-industry pallets have not been examined here, and do not seem relevant to the topic at issue.

Cost variable ranges from which the simulated data were generated were developed by applying an estimated 2-standard deviation buffer around the cost numbers suggested by the project participants. For example, when product manufacturers typically gave us recycled pallet purchase costs of \$4.50 to \$5.25 on average, we selected \$4.00 to \$6.00 as a range that would have a solid chance of capturing recycled pallet purchase costs in at least 95 percent of the cases around the country. We attempted to be conservative in our estimations; that is, we tried to give a wider range than we suspected we might find through exhaustive data collection. And to double the conservative nature of our analysis, we sampled from a uniform distribution of randomly generated numbers within that range. This would eliminate any bias from an over-specified exponential or normal distribution, and give us estimates that allow for an equal chance of generation anywhere within the range. For our example above, then, the simulation model randomly generated recycled pallet purchase costs between \$4 and \$6, with any cost in that range having an equal chance of being generated.

In a simulation where we might have stronger data to guide our cost simulations, we would attempt to increase the precision of the simulated instances by sampling from a more specific distribution, such as a normal (bell-shaped) distribution. This would drive the randomly generated cost scenarios toward the center of the specified range, implying that we have confidence that the actual true average cost would be near the center of the range. However, lacking a large sample size for direction, we opted to generate and sample the variables from uniform (equal-chance) distributions, which decreases the precision of the estimates of average cost, but increases our chances at accuracy in conclusion.

Finally, it does make logical sense that certain of the variables used in the cost models have some degree of correlation. In some cases, these variables may be inversely correlated, with the result that a high cost of one variable in a system may necessarily generate a lower cost of the inversely-correlated variable. In a simulation-based analysis of this type, variable correlation is impossible to ascertain. If real data ever become

available for study, correlation analysis, along with more precise generation of variable distributions as noted above, will certainly improve the quality of the analysis.

### Conclusions

Our simulation of the relative costs for pallet rental systems vs. pallet purchase yielded a number of important findings. First is that the average system cost, to all pallet users in a typical grocery pallet supply chain, of a rental pallet is from \$1.01 to \$2.11 higher than the average system cost of a purchased pallet. However, pallet system costs at the product producer (e.g., a food manufacturer) stage of the supply chain can be lower for rental systems, depending on pallet turns.

Pallet system costs roughly equalize once the pallets enter the distribution system. Daily rental fees, transfer fees, and NPD surcharges begin to offset the higher acquisition costs of the purchased pallets. Higher initial cost and product damage costs in the purchased pallet systems are offset by the higher administrative costs of the rental pallet systems.

It appears that final disposition of the pallets determines the ultimate cost differential of the two systems. The return credit or sell price of purchased pallets yields the cost advantage for the purchased pallet system, and it is increased by the rental pallet return costs. Since the system price differential is not realized until this final step in the supply chain, only distribution centers or vertically integrated corporations realize the impact of this differential.

Verification of the data ranges in this study, and generation of a large number of simulated scenarios stemming from those data ranges, lead us to have a high level of confidence in the *accuracy* of the conclusions of this study. We would expect actual pallet system costs to fall within the predicted ranges anywhere in the United States where the variable costs fall within the stated ranges.

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# Harnessing Our Power: Pallet Industry Management System (PIMS)

**M**arkets are built by entrepreneurs who see a need and fill it. The end user pallet market is demanding high-quality block-class pallets. The cost of building to this quality will have a tendency to alter the perception of the pallet from that of a commodity to an asset. It changes the perspective from purchase to investment thereby creating an incentive to manage the pallets for multiple trips use.

There are more than 1.2 billion pallets in service in the United States each day. Our industry has some 5,000-plus entrepreneurs. The efficiency of these companies in their ability to build, recover, repair and reuse massive numbers of pallets has been tapped by national pallet pools. But what if this system were structured to work directly for the independent companies, both those who want to build high-quality block-class pallets and recyclers who form the essential foundation for asset recovery who can also repair pallets to their original quality? The exploration of this potential is what we call "Harnessing Our Power."

To do that, to harness the strength and efficiency inherent in our industry, a Board-appointed task group has been working on an initiative that would provide industry entrepreneurs with a system for maintaining the existing autonomy and market incentives, while adding the logistical coordination necessary to meet the needs of end user corporations that require the scope of a national network.

The concept of such a system was discussed with major grocery manufacturers and food industry representatives and they have been universally enthusiastic and receptive. To have an industry banding together to provide for their needs, rather than an individual company is in one user's expression, "Just what the doctor ordered."

The concept is not solely a pallet industry program, nor is it a grocery industry one. It will be a supply chain program. The system will not be represented by a single corporate identity, but by an industry – the wood pallet and container industry. As for end user industries, any may participate who are willing to agree to the following stipulations:

- Purchase pallets only from certified Pallet Industry Management System (PIMS) suppliers, agree to control in-house inventories independent of Pallet Logistics Central (PLC).
- Will not ship PIMS pallets to non-participating customers.
- Buy-back at competitive market costs when pallet is returned and resold by participating recycler/manufacturer.

The NWPCA task group formulated this concept after studying the systems implemented by the Canadian Pallet Council and the European EPAL. The group concluded however that neither system, if duplicated, would best satisfy the needs of the U.S. market.

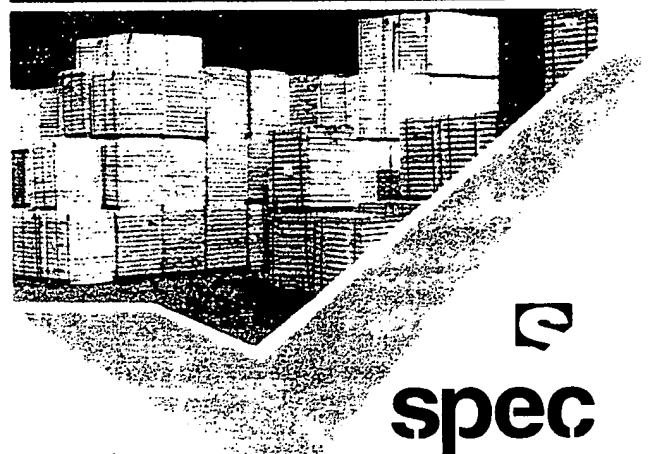
While it is the NWPCA that is working on the concept, the association will not manage the program. Instead, it will be managed by a newly formed non-profit organization. We call this concept PIMS.

## PIMS Goals

Here is an outline of goals for the PIMS concept as it stands today. Remember, we still have much discussion ahead of us – with our industry, end users and retailers – before we finalize the program.

- To streamline the flow of pallets within a customer's network.
- To standardize and coordinate a program to contain system-wide costs.
- To eliminate inefficiencies in pallet handling.

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- To provide a timely and consistent replenishment program.
- To provide system-wide inventory control, forecasting and planning of pallet movement.
- To turn the essential pallet from a perceived liability into a genuine asset for the customer.

#### **PIMS Product**

Our PIMS pallet will have the following specifications:

- 48 x 40 block-class
- Safe working load capacity of 2800 lbs. in warehouse racks or in stacks
- True 4-way entry
- Multiple-use
- ISPM 15-compliant – eventually all pallets made or repaired in the U.S. whether for domestic use or export will require treatment consistent with phytosanitary regulations to stop the spread of non-native invasive species.
- Individual auto-identification to facilitate the tracking of each pallet in the system – both RFID and bar code

#### **PIMS Participants**

Board of Directors: PIMS will have a Board of Directors comprised of program participants. This will include pallet suppliers (both new manufacturers and recyclers), pallet purchasers and pallet transporters. The Board will establish policy and procedures, adjudicate violations

and oversee program management. The Board is the entity that will offer pallet suppliers a "participant license" to manufacture and/or repair PIMS pallets.

Third-Party Inspectors: PIMS pallets, both new and recycled, will be inspected for the quality standard established by the Board of Directors by a third-party inspection agency. It has been made clear in discussions with those in the grocery industry that to eliminate this part of the program would be a deal-breaker for them. Third-party inspection assures that all PIMS pallets comply with the Board-approved specifications. Inspections will be based on a practical range of measurement rather than a rigid, singular one. The inspection process will be similar to that of those done for export pallet compliance.

Pallet Users: Pallet purchasers may only buy new or recycled PIMS pallets from authorized suppliers. They will be asked to agree not to ship PIMS pallets to non-participating retailers. A selling point to users has been the fact that they can pass along the initial cost of the pallet to their customers. They also appreciate the fact that this system does not have dwell time charges or hidden costs for sorting, tracking and paperwork or for broken pallets returned to the pool.

Participating DC/Retailer: It will be up to the Pallet User to implement controls

in their unique distribution systems that will impose requirements for their distribution centers and retailers to ensure PIMS pallets are sold only to participating pallet suppliers. The DCs and Retailers, like the pallet users, are free to use any participating suppliers. The pallet users may also set up a system in which the PIMS pallets are returned to them by the DC/Retailer.

PLC: Logistics management will be handled by the non-profit entity discussed earlier. PLC is the lynchpin of the entire logistics system, and will manage the secure closed-loop logistic tracking system in cooperation with pallet suppliers and owners. It is important to note that this process flow, which is similar to existing systems, differs in that it allows for a completely free competitive market environment among all participants in the sale and repurchase and resale of new and recycled PIMS pallets.

Clearly this program is not going to be endorsed by every pallet supplier. And equally clearly this program's block pallet configuration will not entirely replace the runner/stringer pallet. But it is a new business model that opens new business opportunities for our industry.

#### **Industry Discussion at the 2008 Recycling and Packaging Conference & Exposition**

After the PIMS presentation, the meet-

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ing broke to allow attendees to consider what they had heard and return with questions, suggestions and concerns. Here are some highlights of that discussion for those who could not attend.

- A member of the initial PIMS task group said that there are a number of customers complaining about the costs that are being transferred to the end user through the sortation process. He said that like Costco, who has announced that it is limiting their pallet sortation to CHEP, PECO, iGPS, CPC and a white wood block-class pallet, other customers are going to put limits on their sort list, and that "if we don't get on the list of sorts we're out!" He and several others at the meeting said this is driving a sense of urgency for moving the PIMS program forward.
- Another participant noted that large corporations are recognizing previously hidden costs, due in part to better technology that allows for more accurate accounting, tracking, etc., on the existing pools that they want to eliminate.
- The concern was expressed that a not-for-profit might prove to be inefficient. The response from the task group was that the Board's inclusion of end users will provide the impetus for comparable efficiencies

to profit-yielding companies.

- An attendee said he is "getting pressured by major end users on the pool quality."
- A suggestion was made to include in the PIMS model a five-to-seven year depreciation on the pallets.

### Next Steps

Judging from the overwhelming numbers of attendees who indicated both a desire for more information and a readiness to participate in the PIMS program, its concept is clearly being embraced by a significant proportion of our industry. To successfully launch PIMS beyond concept to the implementation stage will require more than momentum – to evolve PIMS from a great concept to a successful business model will take individual companies making a commitment to do the necessary legwork.

Steve Geiges, a member of the Board-appointed concept task group, made the point at the conference discussion that we need to have more than one or two large end users to role out the program saying, "We'll need critical mass."

**Call to Action #1:** We need to form teams comprised of pallet providers, pallet users, warehouse distribution, and retailers to address the following:

- Product – standards and quality control process

- Logistics – closing the loop
- Marketing – participant outreach/ understanding

### Call to Action #2:

- We need wood pallet manufacturers/recyclers to meet with your large customers to discuss the PIMS concept and ask them to participate in one or more of the task groups listed in Call to Action #1.
- We need to identify large pallet users willing to commit to participation in the program.

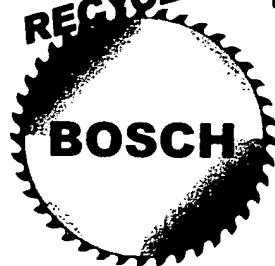
For pallet suppliers who want to facilitate the promotion of this system to your customers but do not feel comfortable making this presentation, a member of the concept task group could accompany you for that initial discussion.

To become involved in Action #1 or #2, contact me at 703-519-6104 or bscholnick@palletcentral.com.

If you are interested in receiving e-mail communications on the program and/or you wish to express your interest in participating in task groups to further the development of the program, send an e-mail request to palletinfo@palletcentral.com with your name, company, e-mail address and phone number. ☺

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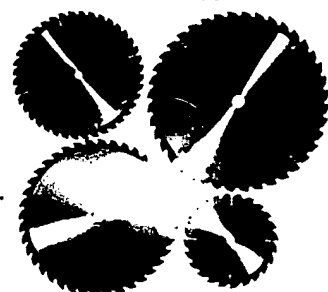
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# Experts Study the Economic Feasibility of an Industry Cooperative Pool

By Chaille Brindley

The success of CHEP around the globe and the impressive growth of the EPAL pallet pool in Europe demonstrate that there is money to be made in pallet pooling. But that doesn't mean that every pool concept will work or even be profitable. For years, leaders in the U.S. white wood pallet industry have discussed the development of an industry cooperative pallet pool that holds to high quality standards and is regularly monitored to ensure compliance. One of the most promising proposals in a long time is the Pallet Industry Management System (PIMS), which is an industry cooperative pool being championed by a number of major pallet companies, including a number of major players in the National Wooden Pallet & Container Association (NWPCA).

The PIMS model is just in the concept stage at this point. But recent economic analysis by a group of experts indicates that the model could save pallet users

money in the long run. The NWPCA along with money from the Pallet Foundation commissioned a survey to analyze the business case for the PIMS model. Dr. Charles Ray and Dr. Judd Michael of Penn State University presented their findings at the Orlando NWPCA meeting. Their analysis was based on a survey of 103 pallet companies, data from the *Recycle Record* and other sources.

Many industry leaders agree that the pallet recycling industry needs to develop an industry-wide answer to pallet rental options, including a quality standard to meet changing customer demand. One of the major dilemmas remains the quest for quality while customers continue to switch suppliers for nickels per unit. Although this is nothing new, the increase in warehouse automation, the development of a major all-plastic pallet pool in iGPS, and an improving CHEP rental pool, suggest that

pressure is mounting on white wood respond. At the same time, the white wood pool isn't getting any younger.

There appears to be no easy answer. But PIMS is a bright idea that has generated some support from major pallet users. PIMS is a certified and inspected pallet quality standard combined with a management system and network of pool operators designed to offer pallet customers an option to traditional pallet rental models. The PIMS calls for regular quality inspections to ensure the highest quality standard, similar to the approach used by EPAL in its European pallet pool.

Although there have been numerous attempts to discuss similar plans in the past, none have developed the traction that appears to be building for PIMS. However, this does not mean that the success of PIMS is a foregone conclusion. There remains a lot that has to be done for this dream to become a reality. Some skeptics don't believe that PIMS stands a chance to succeed. At the same time, many forward-thinking leaders in the industry feel that momentum is building to develop an answer to the challenges facing the white wood pool.

Clint Binley, the outgoing chairman of the NWPCA, said, "It (PIMS) will happen today. It will not happen tomorrow. But it will happen down the road."

Based on the results of the three-month study, the PIMS computer simulation projected a total pool size of

### Chart 1: PIMS Profit & Revenue Projections

#### Pallet Manufacturers

- Pallet pool of 24 million block pallets built over five years.
- \$61 million in profits over five years.

#### Pallet Recyclers

- 220 million recycled pallets sold back into the custom pool over five years.
- \$292 million profit generated over five years for participating recyclers.
- Low repair rate, especially in early years.

#### Retailers/Distribution Centers

- About \$670 million in revenue generated from PIMS pallet core sales over five years.

Source: NWPCA Presentation and interview with Dr. Chuck Ray.

million pallets by year five and an average new pallet cost of \$18 per unit. The model assumed 6-24 months of use before repair (averaging 18-21 months) and a fairly high 8-10 trips per pallet per year. CHEP averages around four trips per year. Dr. Ray suggested that the high core value, especially in the early years of the PIMS ramp-up, gives DCs a significant economic incentive to turn pallets as quickly as possible compared with the typical rental pallet scenario.

PIMS has four major types of participants in the model. This includes the pallet manufacturer, the shipper or product manufacturer, the retail DC and the pallet recycler.

Dr. Ray's analysis shows a good business case for the model, but the big challenge is the funding of the system. The cost just to purchase the pallets alone could run \$432-500 million over five years. This does not include any administration and software development, maintenance and other system costs.

Dr Ray said that the overhead of PIMS, including presumably the soft-

## Revisiting the Grocery Industry Pallet Study 20 Years Later

A group of grocery industry leaders met in 1989 to discuss the future of the fast moving goods supply chain and palletization. They looked at the future of the "GMA" pallet, especially various economic models. The committee included many of the top food producers in the country as well as major retailers. Representatives included members of the Food Marketing Institute, the Grocery Manufacturers of America, the Produce Marketing Association, the Private Label Manufacturers Association, the American Meat Institute, and the National-American Wholesale Grocers Association.

Looking back at the past, the committee analyzed costs in the grocery supply chain. Principal among the study's findings were an overall pallet system cost of nearly \$2 billion, almost half of which was determined to be the result of product damage, carrier inefficiencies, productivity losses and time allocated to sort and repair pallets. This figure translated to a pallet-related cost of approximately 16 cents per case, or \$10.11 for every loaded pallet moved completely through the distribution cycle.

The grocery committee also examined options to pallet exchange. The results of the 1989 survey is shown in Figure 2. At the time, an industry cooperative pool was envisioned to be significantly cheaper in terms of total cost than a private rental pallet pool. Recent analysis by Penn State involving the PIMS model comes to the same conclusions.

ware, is covered by a fee that will be established by PIMS. This fee is pennies per pallet, so in a sense the cost of the pallets does cover PIMS administra-

tion.

The Penn State PIMS model does not include inspection costs. Pallet repair costs were included in the model, and

**Figure 2: Estimated Impact On Manufacturers**

	<b>Present System</b>	<b>Industry Cooperative Pallet Pool</b>	<b>Private Pallet Pool Rental</b>	<b>Private Per Trip Pallet Rental</b>	<b>One-Way Recyclable Shipping Platform</b>	
					<b>\$3 Per Platform</b>	<b>\$4 Per Platform</b>
Pallet purchase	\$1.28	\$.31	-	-	-	-
Platform purchase	-	-	-	-	\$3.00	\$4.00
Carrier rate factors	2.05	-	-	-	-	-
Pallet trip rental and deposit	-	-	-	7.50	-	-
Pallet issue and transfer	-	-	1.88	-	-	-
Daily rental	-	-	1.61	-	-	-
Sortation	.42	.42	.21	-	-	-
Pallet repair	.10	.18	-	-	-	-
Transportation to and from depots	-	.40	.40	.50	-	-
Replacement of lost pallets	-	.19	.02	-	-	-
Company administration	.25	.25	.25	-	-	-
Industry administration	-	.06	-	-	-	-
Productivity loss in order selection and shipment preparation	.63	-	-	-	-	-
Exchange loss	.10	-	-	-	-	-
Workers' compensation	.20	-	-	-	-	-
Damage	<u>2.03</u>	<u>.21</u>	<u>.21</u>	<u>.21</u>	<u>.21</u>	<u>.21</u>
<b>Total cost per pallet trip</b>	<b><u>\$7.06</u></b>	<b><u>\$2.02</u></b>	<b><u>\$4.58</u></b>	<b><u>\$8.21</u></b>	<b><u>\$3.21</u></b>	<b><u>\$4.21</u></b>
<b>Total estimated annual cost (millions)</b>	<b>\$1,355</b>	<b>\$388</b>	<b>\$879</b>	<b>\$1,575</b>	<b>\$616</b>	<b>\$808</b>
<b>Required Investment (millions)</b>		<b>\$770</b>				

Source: Recommendations on the Grocery Industry Pallet System from 1989.

accounted for a portion of the recycled pallet costs to customers for each trip.

Initial projections indicate that pallet manufacturers would experience the highest profit potential early in the development cycle while pallet recyclers would see increased profits over time that would average out to be higher than the profit potential for pallet manufacturers.

The current PIMS model calls for the customer to underwrite the cost of the system, which means that the pallet user

would have to be willing to pay a fairly high trip cost up front. Over time, the cost would drop significantly to be more in line with what CHEP charges. Dr. Ray suggested that the average per trip cost could drop to a fairly steady rate in the \$8 range within nine months of launching the program.

The emergence of pallet rental over the past 20 years has changed customer attitudes toward expensing pallets. Many large companies don't want to buy a pallet. They would rather expense

pallets as a service cost by leasing it instead of an outright purchase. Getting customers to agree to buy a high-dollar pallet asset may be a hard sell. Although this is what many companies used to do, CHEP has been effective in convincing companies that they "don't want to be in the pallet business."

Industry leaders behind PIMS believe that if case studies can prove the business model in the real world, some major pallet users will be willing to switch. The primary benefits for the product manufacturer or shipper is a high quality pallet and the development of a viable wood pallet alternative to traditional rental options.

The biggest benefit may rest with the retail DCs that will enjoy revenue generated by selling used PIMS pallets. Evidently, Costco's representative expressed interest in the PIMS model at the recent NWPCA meeting.

Dr. Ray said, "The retail DCs would benefit greatly from this system, because of the large revenues generated from pallet core sales." PIMS proponents are looking for a retail pull-through strategy, much the way that CHEP used the power of big retailers to encourage shippers to use blue pallets.

The current model projects sizeable revenues for everyone in the supply chain except for the product manufacturers. See Chart 1.

Dr. Ray was quick to point out that the PIMS model is still being tweaked. At the NWPCA meeting, some industry leaders suggested changes to make the model even more appealing to the initial shipper and product manufacturers. These shippers are critical to making the system work although they have voiced a strong desire to see a legitimate competitor to CHEP, and the jury is still out about the long-term viability of iGPS.

Customers want quality and price. These two forces are frequently at odds with each other requiring trade offs. But that doesn't have to be the case over the long term. One thing is clear from the recent analysis done by Drs. Ray and Michael, there is a strong economic case to be made for a system similar to EPAL in the United States. The new pallet math seems to be Innovation+Investments over Time = Higher Profits for All.

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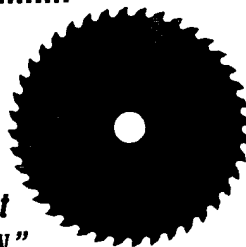
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# Feasibility Analysis of the PIMS Pallet Pool

By Judd Michael, Ph.D. and  
Charles Ray, Ph.D.,  
Penn State University

As most readers will know, the National Wooden Pallet and Container Association (NWPCA) has been discussing the possibility of developing a new Grocery Manufacturers Association (GMA) block pallet pool. This pool would be called PIMS (Pallet Industry Management System), and would have heat-treated, quality-controlled, softwood pallets designed to meet marketplace demands for a high-quality block pallet.

NWPCA leadership believes that pallet users have unmet needs for a heat-treated block pallet that can be reliably used with automated handling systems. Growing customer dissatisfaction with existing options for transport packaging has lead the pallet-using community to seek out a lighter-weight, four-way entry block pallet with low per-trip costs and straightforward administration of their portion of the pool. Grocery users have additional considerations such as safety in their racking systems, display capability and performance under sub-freezing conditions.

This new pool has been proposed as a partnership between grocery manufactur-

We recently presented results of our feasibility analyses at the Annual Leadership Conference (ALC) in Orlando, Fla.. The rest of this article will provide an overview of the findings we presented at that meeting.

One of our first tasks was to contact numerous pallet manufacturers, users and distribution centers to obtain relevant data. This data was necessary to include in our simulation modeling of the PIMS pallet pool across all 50 states during the first five years of operations. Examples of the data we collected from these parties include: production and re-manufacturing capacities and costs, transportation costs, system logic and details of logistics con-

- that orders that cannot be served within two business days are "lost" to the system and filled by alternative pallet platforms;
- that dwell times of the pallets within the retailer/distributor portion of the supply chain conform to verifiable expectations of distributors we have experience with;
- that a customer that purchases a new pallet at market price is allowed access to re-purchase that pallet (or a substitute) at recycled market price until first repair of that pallet.

## **Growing customer dissatisfaction with existing options for transport packaging has lead the pallet-using community to seek out a lighter-weight, four-way entry block pallet with low per-trip costs and straightforward administration of their portion of the pool.**

er and retailer customers, the pallet industry and PIMS to manage logistics of the pool and meet the needs of PIMS pallet users. All PIMS pallets would be built and repaired to rigorous quality standards, and would also be individually identified and tracked via a data management system. PIMS would be governed by a board of directors, but would be open to all new pallet producers and recyclers willing to comply with PIMS policies.

In December 2009, we were tasked with collecting data and conducting modeling and simulation exercises necessary to ascertain the financial feasibility of the proposed PIMS pallet pool. Our overall goal was to estimate financial returns for participants in the pool such as recyclers, new pallet producers and potential PIMS users. However, we were also asked to consider demand forecasts over the first five years of operation and volumes of pallets that might be moving through various parts of the system.

straints. The model also utilizes the data collected in an NWPCA survey of new and recycled 48x40 GMA deliveries to customers in each state. Based on the excellent participation rate of 103 member companies, we were able to establish representative percentages of GMA pallet demand within each of the 50 states.

The computer model that was produced is a discrete-event simulation that varies events in the pallet supply chain across the nation in time sequence as they would normally occur under the assumptions that were programmed into the model. These assumptions include, but were not limited to:

- that production begins and increases incrementally as demand ramps up across the country;
- that the price of new and recycled PIMS pallets changes with demand in the region within economically-deliverable distances;

Results from our modeling have been broken down into four primary constituents: PIMS pallet manufacturers, PIMS recyclers, PIMS customers and retailers/distribution centers (DCs).

**PIMS Manufacturers** - We estimate that 24 million new PIMS pallets would be produced during the first five years, with more than \$60 million in profits generated for the firms making new PIMS pallets. While we see their pallet order files staying mostly at capacity, predictions are that increasing competition and efficiencies could lower the new pallet price and cut profits from year 1 to year 5.

**PIMS Recyclers** - The 24 million new PIMS pallets produced over the initial five-years period would result in the need to recycle PIMS pallets approximately 220 million times. These would be picked up by recy-

clers, sorted (some repaired and some not) and sold back to participating PIMS users. Participating recyclers would benefit by very low repair rates in the early years, which should result in higher margins and better returns for early adopters. However, recyclers desiring to handle PIMS pallets would have to invest in the PIMS database technology and meet PIMS quality standards.

**PIMS Customers** – PIMS customers would benefit through access to the 24 million new block pallets in the national pool as an alternative shipping platform. We estimate that there would be 243 million pallet-trip uses during the first five years, with an average per-trip cost of \$7.64. The per-trip costs would be somewhat higher at first depending on the actual business model chosen by PIMS but they would come down over time as the pallet pool reaches steady state sometime in year 2 or year 3.

**Retailers/DCs** – The big winner in the PIMS system as our model reflects would appear to be the retail users of PIMS pallets and the distribution centers where the pallets would be sorted and sold back to

recyclers. Not only do the retailers/DCs get access to a high-quality block pallet designed to work with their automated handling systems, they also receive millions of these "assets" from suppliers that can then be sold back into the marketplace. Our model suggests that the retailer/DC component of the supply chain would receive more than 250 million PIMS pallets over the five years.

These figures are of course preliminary estimates and will likely change as different assumptions about the PIMS business model are revised after meeting with potential customers.

What do we see as the keys to the success of the PIMS pool? The first key is to sell potential customers on the total per trip pallet costs while also convincing them that their headaches associated with pallets will decrease. Second, PIMS should quantify for retailers the benefits of the PIMS system versus alternatives. Third, that PIMS overhead costs, including the logistical tracking system, should be kept to a minimum. And finally, PIMS leadership should develop significant buy-in from the recycling community for this system. Astute readers will note that a major portion of these key issues are related to marketing of the system. Effectively promoting

the benefits of the system to key decision-makers within the pallet using and recycling communities is going to be one of the most critical challenges for PIMS leaders.

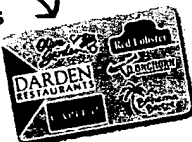
From a big picture standpoint, it appears as though PIMS would have a significant impact on the pallet industry within the first five years of operation. Challenges to the start-up of such a pool certainly exist, and these are being assessed and addressed as we move forward with additional simulation of the pool. Questions remain about the business model that PIMS will follow, and how those questions are answered will have a big impact on the financial returns for each segment of the supply chain.

One of the key points to remember with respect to the development of PIMS is that the proposed pool has been, and will continue to be, an industry-wide initiative. All parts of the pallet industry, as well as a variety of potential customers, have been working to determine the feasibility of the program. PIMS represents a first-of-its-kind model for a pallet pool, and it has the potential to be a win-win for all parts of the supply chain. **PC**

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### **"The Pallet Dilemma"**

The productivity value of pallets applies to two basic areas of operations: internal materials handling, and the movement of goods between trading partners. Standardization of pallet design contributes to effective materials handling between trading partners, as well as efficient application of automation throughout various supply chains. These dynamics have led to the development and widespread use of standardized pallet designs. One such standard is the GMA (Grocery Manufacturers of America) 48"x40", 4-way pallet used throughout the food and consumer products supply chains in the domestic US. A pallet built to the GMA guideline specifications has significant load-bearing capabilities, is rackable, reusable and repairable, resulting in a relatively long life cycle. It also comes with a substantial price tag, and as a result is a valuable asset requiring effective management and control processes. Unfortunately, trading partners in the grocery and other supply chains that have adopted the GMA pallet standard, have struggled mightily with the charge of managing this asset across company boundaries. This is the *pallet dilemma*.

### **Exchange, Rent, or "B.U.S.SM\*"?**

In the Food and Consumer Products supply chains the most common "practice" for managing pallets used in shipments is "pallet exchange". This practice has been a problematic process in the supply chain for many years, and has been the target of many industry studies and improvement efforts. These efforts over the years have not been very successful. Poor pallet quality, record keeping problems, and inconsistent standards/expectations of the trading partners involved have contributed to a general opinion that the exchange process does not work. Carriers have been "stuck in the middle" of the exchange problem, and as a result the process has added significant costs to carrier operations, which causes upward pressure on freight rates and/or accessorial charges.

An alternative to the exchange process that has gained some acceptance is 3rd party pallet rental. This concept eliminates the exchange process, reducing carrier costs, and also addresses the poor quality problem. While rental programs have these benefits, they also have drawbacks, which has resulted in many manufacturers continuing to maintain exchange programs.

### **An Alternative Solution**

An alternative concept that also eliminates the exchange process is **"B.U.S."**: the **"Buy/Use/Sell" Pallet Management Process**. This concept transfers ownership of the pallet from the pallet supplier to the manufacturer, who uses the pallet internally, then sells the pallet under product to the distributor/retailer at a discounted price. The distributor/retailer uses the pallet internally, then sells the pallet to a pallet recycler, who repairs the pallet if needed, then sells the pallet back to the manufacturer for the next "cycle". Like the rental concept, this concept eliminates the exchange process, thus achieving the reduced carrier cost benefit. This concept also provides several additional benefits that the rental program does not.

**Additional Benefits of the B.U.S. Process**

**Competitive Market Dynamics-** The Buy/Use/Sell, or **B.U.S. Pallet Management Process**, allows manufacturers to source all pallets in a competitive purchasing environment as opposed to an exchange environment. There are many pallet suppliers and recyclers in a mature marketplace capable of providing quality pallets that meet defined specifications. In addition to cost/price and quality, supplier service performance can also be managed effectively in a competitive environment. Competitive market dynamics also provide an opportunity for distributors/retailers to optimize recovery value of pallets, resulting in lower operating costs. Both purchase price and selling price are negotiable factors that can dramatically reduce distributor/retailer total pallet expenses.

**Administrative Simplicity-** Buying and selling are among the most basic SOP's for every manufacturer and distributor/retailer. Pallet exchange programs and pallet rental programs are not typically well-managed programs due to the unusual nature of the transactions involved, and the inherent pallet inventory management problems. With the **B.U.S. Process**, pallets are treated just like any other raw material or supply item that is purchased for operations. When the pallets are used to ship products to customers, the pallet becomes a product for sale as well. Treating pallets as a product to be sold just like any other product, creates continuity in business processes, eliminating the need for unique processes for pallet management.

**Distributor Dock Efficiencies-** Receiving products on high-quality pallets, designed to meet distributor/retailer's needs, can result in "put-away-ready" unit loads. This can dramatically reduce re-stacking activity on the dock, reducing costs, reducing unloading times, and improving productivity. Reduced unloading times also improves equipment and driver utilization for carriers, improving productivity and reducing freight costs.

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